The OIL WEEKLY

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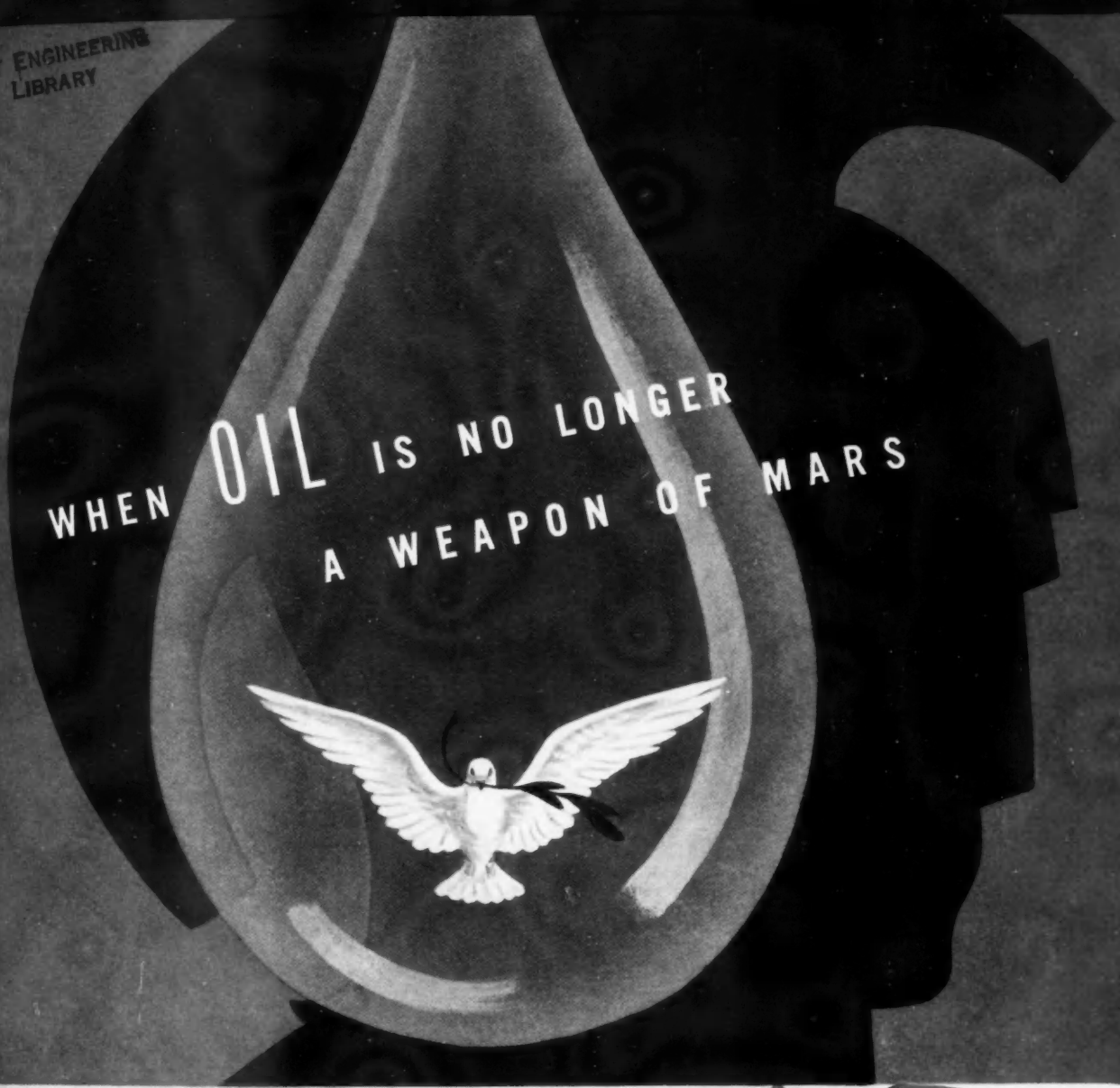

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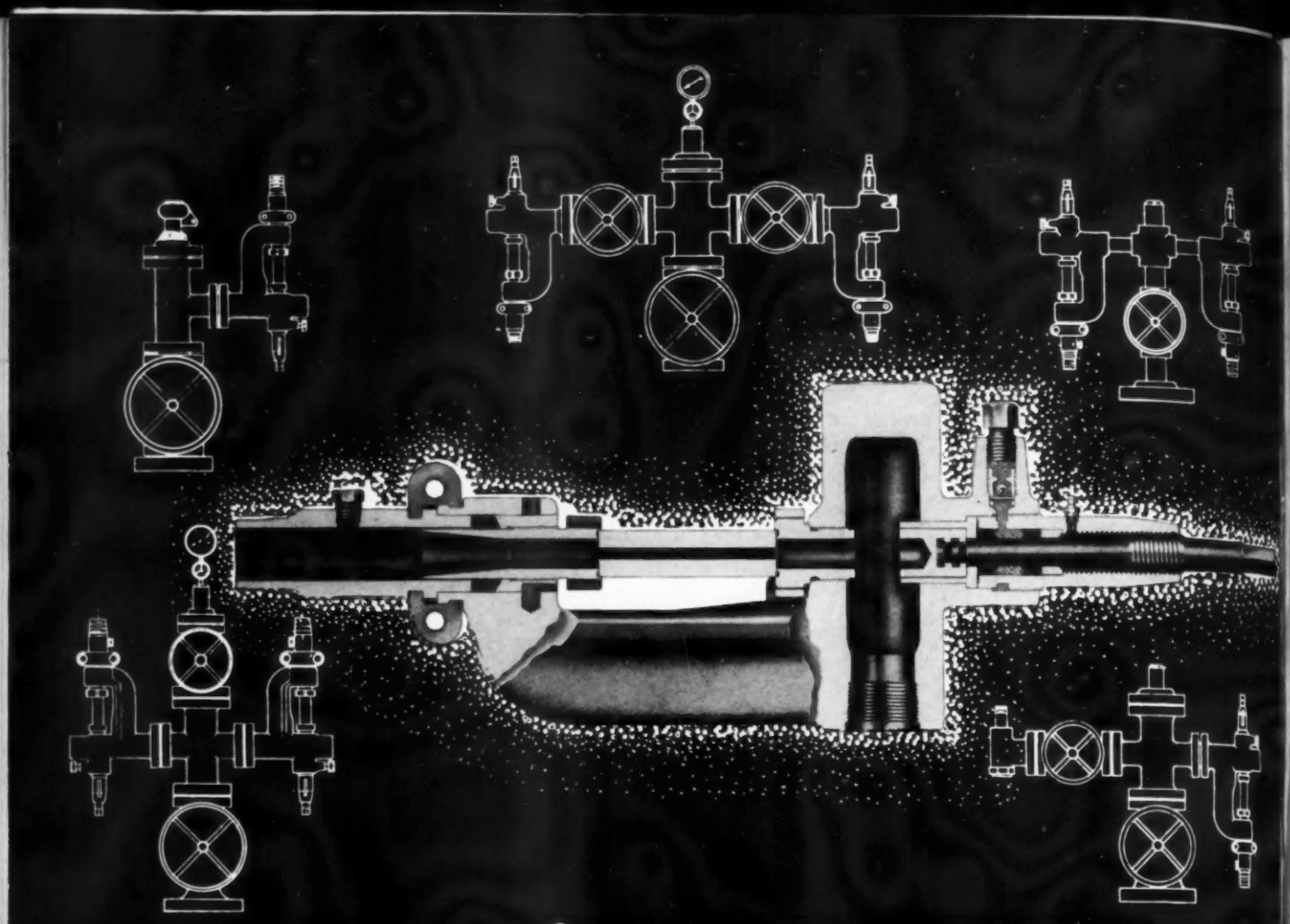

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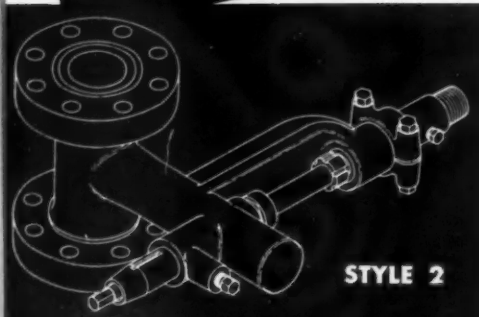
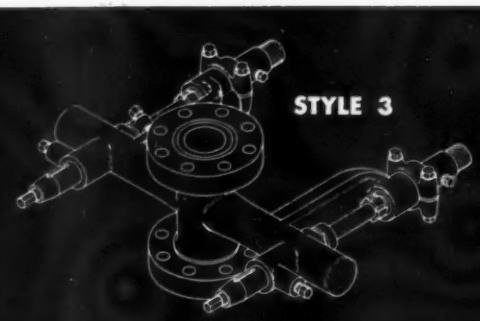
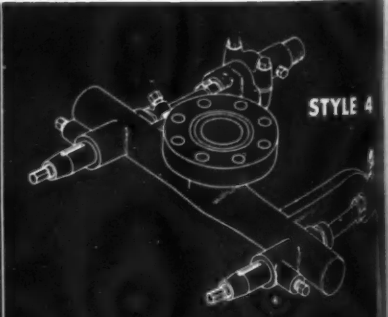


Tee Type Flow Wing for installation in vertical run of Xmas tree



Cross Type Flow Manifold for installation in vertical run of Xmas tree



Tee Type Flow Manifold for installation in horizontal run of Xmas tree

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THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

Published by THE GULF PUBLISHING COMPANY, Houston, Texas

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Published Every Monday. Single Copies 15 cents (Except Special Issues). Subscription price: domestic and foreign, $2.00 a year; 2 years, $3.00. Advertising rates on application.

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LOOKING AHEAD
... with the Editor

AGAIN the world's record for deep drilling changes hands. Standard Oil Company of California registered a record-breaking 16,246 feet before calling a halt to their KCL 20-13, near the South Coles Levee field in Kern County, California, on December 27.

The record was made without any equipment especially designed for deepest drilling, and the fact that the depth recorded was reached is a tribute to the men whose care kept the bit cutting with a minimum of lost time.

The story of the caution and precaution which characterized the operations on the new record holder carries many details of drilling operation which may well be adopted on many rigs now working in fields with controlling depths over 10,000 feet. The next issue will feature the drilling of KCL 20-13, and will have a pictorial section illustrating the men, equipment and methods which made the record penetration possible.

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The Changing Panorama

Power Equipment For Postwar Farms

THE use of power farm equipment is due for great expansion following the war, in the opinion of some observers. Squeezing the last possible bit of work from machinery has been a foremost problem of farmers in the nation since 1941. Due to shortage of farm labor, increased use has been made of power tools and implements, to the extent that according to government figures, farmers are now producing a third more food with about 4.5 percent fewer workers.

Many of the large oil companies are making plans to meet the fuel demands from this type of equipment in agriculture. Some interesting equipment trends are indicated by Stetson Clark, independent farmer, in the current issue of *Ethyl News*. Among items moved or operated by an engine likely to be seen in use on American farms for the first time, after the war are:

The jeep or its offspring turned into an all-purpose farm vehicle.

A one-man, self-propelled combine.

Small garden tractors, smaller than a jeep and of the walking type. They will enable one person to take care of an acre or so of truck crops, and can also be used to mow the lawn. A power take-off can be employed to spray fruit trees, paint the house, and do countless other odd jobs.

A cultivator that sifts dirt over weeds not reached by the shovels, to smoother them.

A tilling device that may fit land for planting more scientifically than a plow does.

New power devices in operation now include a sugar beet harvester that digs, tops and loads 200 tons of beets in eight hours. A peanut digger and shaker cuts down the work of harvesting to a tenth of the normal requirements.

"There is no fairyland between the producer and customer where increased costs become profits instead of losses. If, through taxation or otherwise, we penalize those who undertake to produce and serve, there will be fewer jobs to be done and we shall present to the returning soldier a land of decreasing and not of increasing opportunity."

—ENDERS M. VOORHEES,
Chairman, finance committee,
United States Steel Corporation.

Geology Speaks

ERUDITE E. DeGolyer of the firm of DeGolyer & MacNaughton, would dig this one up for the firm's Christmas card:

"Some drill and bore
The solid earth, and from the strata there
Extract a register, by which we learn
That He who made it, and revealed its date
To Moses, was mistaken in its age!"
William Cowper 1731-1800

War Improvements In Steel-Making

MANY substantial improvements in steel-making, learned under wartime pressure, which will better the postwar goods of everyday civilians, have been revealed by Dr. J. B. Austin, assistant director of United States Steel Corporation's research laboratory in Kearny, New Jersey.

The steel technologist said steel processes have been brought by the war to new heights of achievements, both in basic metallurgy and adaptability to many uses. Among the new metallurgical advances which may be translated immediately from war to peace use he listed as typical:

The employment of a minute percentage of boron to enhance the hardenability of steel.

New knowledge, experience, and steel compositions for using steel at elevated temperatures, as in oil refineries, chemical processes, steam power plants, and in superchargers for the development of a new turbine prime mover.

The use of welding as a means of fabrication on many grades of steel which were considered hardly weldable in prewar times.

The continued use of at least some of the so-called national emergency low-alloy constructional steels, which were developed in pressing circumstances, to help conserve the supply of alloying elements and make the most effective use of the alloy content of existing steel scrap.

These new steels, Austin explained, offer multi-purpose advantages which are easily demonstrable over the unnecessary large number of "custom made" steels provided before the war.

Getting Service Men Back on Their Jobs

OPPORTUNITY for individual advancement and betterment and progressive employe policies are proving their worth in keeping the Shell Union Oil Corporation's organization close to a peacetime basis. Approximately 85 percent of all employes of this company, known to have been honorably discharged from military service and returned to civilian status, have come back to work with the company in equivalent or better positions than they had previously.

R. G. A. van der Woude, president, attributes this high percentage of return to three broad policies of the company:

1) The military leave allowance plan, in force since Pearl Harbor, under which the corporation makes up the difference between military pay and former company salary, up to a maximum of 50 percent of the latter, to all employes on leave of absence who are married or have dependent children.

2) The non-contributory pension plan with retirement at age 60 years.

3) The provident fund, a savings fund to which employes may contribute up to 10 percent of earnings depending upon length of service, with the corporation matching the employes' contributions in full.

Pressing Need for East Texas' Share

A STUDY of comparative increases in daily average production from major producing districts of Texas indicates those areas which are bearing the brunt of furnishing oil for the war effort. Significantly, three of these districts have almost doubled their output during the past four years and the fourth has shown a very substantial gain. The fifth, at the end of 1944, was furnishing only approximately 5984 barrels more oil than in 1941.

Greatest increase has been from the West Texas region where the daily average yield has jumped from 252,889 barrels in 1941, to 438,911 barrels in 1944. The Upper Gulf Coast area shows the next largest gain, rising from 267,468 barrels daily in 1941, to 530,599 barrels last year. Third place is held by the

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Lower Gulf Coast district which shows a gain of 104,458 barrels in daily yield, going from 117,523 barrels in 1941, to 221,981 barrels in 1944

Trailing at the bottom of the list is the great East Texas field, generally known as the world's largest oil field. In the East Texas field only 5984 barrels more oil is being taken out daily than was during prewar 1941. The daily average yield of the field was 363,062 barrels in 1941, and 369,146 barrels in 1944.

The territory surrounding this field, known as the "Rest of East Texas," increased in output in similar proportion to the other Texas districts. For this area, daily average production in 1941 was 78,345 barrels. Last year it produced 135,505 barrels per day, a gain of 57,160 barrels.

Four-Year Comparison of Daily Average Crude Production for Major Districts of Texas

FIELD	1944	1943	1942	1941
East Texas Field	369,146	352,012	332,408	363,062
Rest of East Texas	135,505	117,000	87,504	78,345
Upper Gulf Coast	530,599	414,904	250,247	267,468
Lower Gulf Coast	221,981	145,693	126,903	117,523
West Texas	438,911	269,942	222,422	252,889

Thus, the East Texas field is the only important producing territory of the state that has failed to contribute toward the war effort by producing a substantially greater amount of crude oil than before the war. The field is capable of producing more oil, and probably could produce a substantially larger quantity without unduly damaging its reservoir pressure. There is a great need for additional oil at this time, and circumstances require that it be located so it can be conveniently put into the Big-Inch pipe line system that starts right in the East Texas field. East Texas should contribute its share to the war effort.

From Where The Absentees?

THE first 10 months of 1944, covered in a recently issued report by the Bureau of Labor Statistics, shows absentee rates for 27 industries contributing directly to the production of needed war supplies. The group rate for this period averages 6.2 percent absentees, or an indicated total of 190,000,000 man days for the entire year. It is interesting to check absenteeism by industries in this group, and significant of the seriousness with which the petroleum industry workers regard the war to note that their absentee percentage is 4.1, lowest in the entire group, though pressed closely for honors by the steel industry with 4.3 percent.

Another bright chapter in American industrial chemistry is opening as the chemical workers in our own research laboratories and in the research laboratories of other organizations in the petroleum industry, delve deeper and deeper into petroleum chemistry and solve more and more of petroleum mysteries.

—Socony-Vacuum News.

At the other end of the list appears the astonishing figure of 8.2 percent, representing the shipbuilding industry. This is the sole figure in this bracket, and with ferrous foundries, having 7.3 percent absentees, alone stand beyond the 7 percent mark.

It is interesting to note that the industries showing the highest absentee rates are not the ones with large groups of women workers—despite the croakers who earlier insisted that absenteeism would be rampant where women were employed—nor are they the ones where occupational hazards rate high. Since absenteeism is computed on individual failures to report for work, strikes are not included in the overall figures, and thus no parallel can be drawn on an organization basis.

While the producers of high-octane gas and lubricants for our armed forces show the best record in the report, it is hard for an ex-soldier to visualize an army in which 4 men out of every 100 decide not to show up for battle at the zero hour—or an army which could win were such tactics permitted.

The Job That Industry Must Do

PRIVATE enterprise is facing its supreme challenge today. Never again, in all probability, will it have the opportunity it now faces to provide genuine economic leadership.

The importance of this opportunity is emphasized by the National Industrial Information Committee of the National Association of Manufacturers, in a publication called "A Time For Action." The job that industry must do now is outlined.

"Industry cannot hope for sympathetic political action," it is noted, "until it has convinced the public of its own good motives and of its economic leadership.

"Therefore it must go to the public now with a positive program—a program specifying the *action it intends to take*. It must convince the American people that it *can* do the job. For only by creating this confidence, can industry pave the way for requests for public cooperation. And to build a confidence in itself among the American people, industry must blueprint exactly *how* it will do the job. For the crux of the whole matter is a question of choice—a choice between a free economy and a government-controlled economy; a choice between the future offered by one and the future offered by the other.

"We have already seen that the American people are willing to forego not only a certain amount of freedom but also a certain amount of opportunity and abundance if by so doing they can be provided with economic security. They would prefer to have both—security and abundance—and if American industry can put before them a program providing both, it can expect the cooperation it must have, not only to succeed, but to survive."

"Socialistic Pattern Clear"

RECOMMENDING changes in national policy which will provide for the orderly and permissive development of competitive transportation systems under control of the Interstate Commerce Commission, the Transportation Association of America, has recently submitted a report to the public.

Pointing to the sweeping indictment of the railroad industry filed in September by the anti-trust division of the government, the report says that "The Sherman act is being used as a device to disintegrate the transportation industry of the country." One of two alternatives is inevitable if the Department of Justice is upheld, the report points out: Attrition to the vanishing point, of the value of private capital invested in many properties, or constant increase in the general level of rates to offset the consequences of destructive competitive service and rate wars.

"This particular suit against the railroads," it is contended, "is the frontal attack in a campaign to remake the economic and social life of America along the formula laid down as early as 1938, when the Sherman act was selected as an instrument to gain control over essential industry. Since that time the Department of Justice has attacked the whole cross-section of the business life of the country, including actions against insurance, petroleum, milling, packing, lumber, pharmaceutical manufacturers, the Associated Press, and even the medical profession. These industries and many more are being charged with violations which have existed for years without the Department of Justice having suspected them. The socialistic pattern is very clear."

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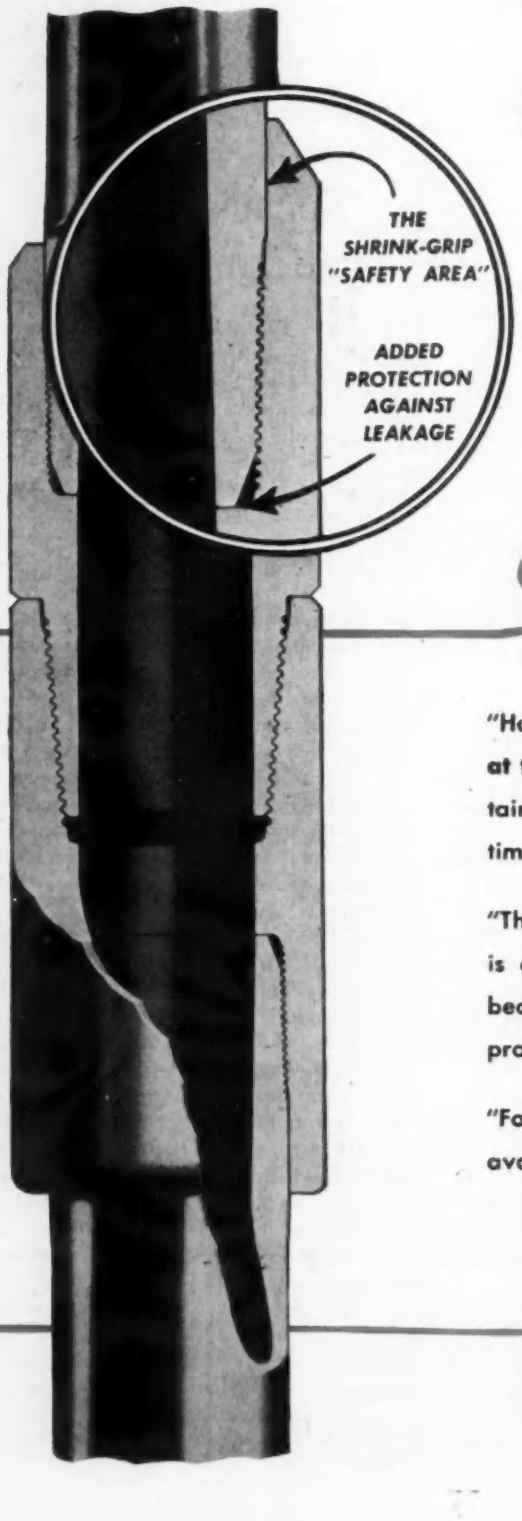

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REED ROCKY MOUNTAIN DIVISION MANAGER

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"Hand application of Reed Super Shrink Grip Tool Joints at the rig is a very important advantage in the Rocky Mountain Area where distances are great, and transportation sometimes difficult.

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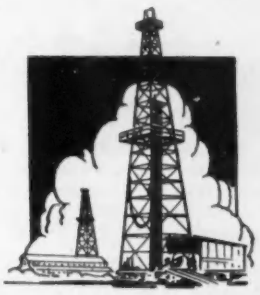

By BERTRAM F. LINZ, Washington Correspondent

PLANS to revise the Anglo-American petroleum agreement to conform to the views of the industry, as expressed by the national oil policy committee of the PIWC, advanced a step last week when President Roosevelt requested the Senate to return the agreement, submitted to it last August 24 for ratification.

Oil Pact Differences—The next move will be meetings between State Department officials and representatives of the industry to iron out differences on which agreement must be reached before the British government can be asked to reopen negotiations.

Tax Relief Not Likely Soon—Little hope for any tax relief before the end of the war is left by President Roosevelt's budget message, in which he told Congress that government spending would decline during the coming fiscal year but that general business and federal tax collections also would be reduced.

Deferments to Be Checked—Manpower problems continued to plague the administration and, in at least one area, the shortage of labor for war plants resulted in the imposition of strict labor controls, while the need of the Army for men through the first half of the year indicated that occupational deferments of registrants under 30 will be closely scanned.

Oil Items in DSC Report—Defense Supplies Corporation, reviewing its 1944 activities, disclosed that it paid out $11,300,000 in stripper-well subsidies, more than $300,000,000 on extraordinary transportation costs of oil, loaned $190,000,000 for the construction of 100-octane plants, and cleared $67,500,000 on the Big-Inch and Little Big-Inch pipe line operations.

President Suggests Overhaul of Tax Structure for Postwar in Budget Talk

President Roosevelt last week dissipated all hopes that government expenditures after the war would return to the level of prewar years, telling Congress in his annual budget message January 9 that expenditures for veterans, tax refunds and interest on the public debt alone in the fiscal year 1946 will run in excess of $7,000,000,000, or more than the whole federal budget five years ago.

At the same time, the President said the reduction which is foreseen in government war expenditures in the coming fiscal year will be reflected in lower income to the people and in a corresponding decline in individual and corporation income tax collections of more than $4,000,000,000.

The current over-all estimate of the cost of conducting the war and supporting the government establishment during the year beginning July 1, next, is $87,000,000,000, of which $70,000,000,000 is for war purposes, or $10,000,000,000 less than the estimated expenditures for the current year. By the end of the 1946 fiscal year, the President said, the national debt will be $292,000,000,000, with an interest charge of $4,500,000,000 a year.

In view of the current all-out production for war and uncertainty as to future military developments, Roosevelt emphasized, there is no justification at this time for tax reductions but, he assured Congress, "when a favorable development of the war allows a major decline in war expenditures, minor tax adjustments will become possible and desirable."

Meanwhile, he said, planning for the postwar period must not be unduly delayed if full employment and prosperous business are to be maintained. As a preliminary step to that end, he recommended extension of the economic stabilization act, now due to expire June 30, explaining that:

"When war production is extensively reduced some of the controls which were needed in an all-out war economy can be relaxed, although other controls must be continued to assure necessary war production and orderly reconversion. For example, we must avoid speculation in inventories such as contributed to the inflation after the last war. The fact that many businesses and individuals have ample funds for a buying spree necessitates caution in relaxing controls. The balance between incomes, savings, and expenditures will still be precarious during the reconversion period. It will therefore be necessary to retain the machinery for allocation and price controls as long as certain materials and finished goods are in short supply."

The President emphasized two elements which should receive prompt congressional attention—taxes and policies.

"We must overhaul the wartime tax structure to stimulate consumers' demand and to promote business investment," he said. "The elements of such a tax program should be developed now so that it can be put into effect after victory.

"We must make sure that there are opportunities for new and growing business. The national and international policies which we adopt now—affecting trade, credit, investment, and competition and monopoly—largely determine future business and employment opportunities."

The budget submitted to Congress by the President carried no detailed estimates for the War or Navy Departments or the various war agencies, including PAW, WPB, or OPA. Those estimates, he said, will be submitted in the spring, and will reflect any changes which may have occurred in the military situation.

Interior Department Funds

The estimates for the permanent agencies included $209,000 for the petroleum conservation division of the Interior Department, compared with $200,000 for the current year, the additional money being for needed travel, service and equipment.

The appropriation proposed for oil and gas investigations by the Bureau of Mines is $583,000, compared with $657,640 this year, the cut being spread among all of the projects. However, if overtime pay is continued through the year, additional funds will be necessary, offsetting the reduction. The individual projects for which funds are provided include the primary extraction of crude oil and natural gas, $141,520 against $158,000 this year; secondary recovery and development of oil-impregnated surface and near-surface deposits, $92,330 against $116,900; transportation and storage of petroleum and natural gas, $6800 against $7750; chemistry and refining of oil, $194,120 against $210,800; thermodynamics of hydrocarbons, $56,230 against $63,500, and operation of the experiment station at Bartlesville, Oklahoma, $92,000 against $100,690.

A fund of $13,000,000, compared with $5,000,000 this year, is to be provided for the bureau's investigation of synthetic liquid fuels from coal, oil shale and agricultural and forestry products, a five-year program which was approved by Congress last April.

Cost of enforcing the leasing act by

the Geological Survey in the next fiscal year will be $475,500, against $557,000 this year, the item for oil and gas leasing activities being reduced from $421,920 to $360,010.

The budget disclosed that the Bureau of Mines plans an investigation into the resources, production, storage and utilization of helium, for which an initial appropriation of $80,000 is to be provided.

A summary of anticipated receipts showed that sales of crude and other products from the Elk Hills naval reserve is expected to bring in $7,500,000 during the 1946 fiscal year as compared with $8,400,000 this year, and that the net profit from the sale of gas from helium plants will be $40,000 the same as this year.

Other receipts will include $15,000 from pipe line rentals, $500,000 from royalties from the California naval petroleum reserves and $3,403,000 from royalties on oil, gas, etc. Taxes collected on pipe line transportation are figured at $16,500,000, the same as for this year. No estimates were given of receipts from the taxes on gasoline and lubricating oils.

Elk Hills Production Nears Promised Figure

Production in the Elk Hills Naval Reserve is in excess of 44,000 barrels daily and the objective of 65,000 barrels a day will be reached well in advance of the Navy's deadline of next June 30, it was announced January 8 by President H. D. Collier of Standard Oil Company of California.

In the past seven months, Collier disclosed, 117 wells have been completed to the shallow zones at approximately 3000 feet, and are giving an average daily production of better than 200 barrels per well.

Nineteen contract drilling strings now are working in the field, and the monthly total completions have been increased from four last July to 33 in December.

The complete program is expected to total approximately 250 wells, from the output of which, under the operating agreement, Standard will get 15,000 barrels daily, the remainder being sold by the Navy to the highest bidder.

Page Succeeds Coleman at PAW Program Division Post

Stewart P. Coleman, director of the PAW program division, has resigned to return to his position as director of the department of economics of Standard Oil Company (New Jersey), and will be succeeded by Howard W. Page, formerly assistant director.

In addition to his duties as head of the division, Page will have immediate supervision of the domestic programming work, with Jerry Cogan, formerly an assistant director, as associate director of the division and in charge of programming oil supplies for foreign areas.

Coleman joined PAW in June, 1943, after having served for two years as chairman of the PIWC working subcommittee on petroleum economics. He acted as PAW representative at the world program conferences with representatives of other war agencies and of the corresponding British offices, at which the war needs of the United Nations were reviewed and projected.

Occupational Deferred Men Facing Military Service as Needs Expand

Faced with the need for 900,000 men in the first six months of this year, the Army will have to reach into the 26-to-29 age group and take men now working in essential industry under occupational deferment, Congress was told last week by Undersecretary of War Robert P. Patterson.

With an additional 700,000 men needed in essential industry, administration leaders emphasized, work-or-fight legislation is imperative. A general national service act would be preferred, it was said, but military, manpower and production officials are willing to accept an emergency bill providing limited national service for men from 18 to 45.

Deferments have been granted to 830,000 men in industry, half of whom might qualify physically for military service, it was disclosed by James A. Krug, chairman of the War Production Board. The several federal agencies are attempting to decide how many of these men can be released for military service, he said.

The major effect of work-or-fight legislation would not be to take all the 4-F registrants, one fourth of whom are known to be in essential industry and a large proportion of whom may be in war supporting activities, but to force men from 38 to 45, who would not normally be called for military service, into war jobs.

Labor leaders have been loud in their denunciation of work-or-fight legislation, declaring that all military and essential needs have been met, but these claims are not confirmed in Washington, where the administration long has been bedeviled by strikes and absenteeism. The latter, it was disclosed, knocked soft coal production after New Year's day to little more than 8,000,000 tons from 10,000,000 the preceding week and 12,000,000 late last year.

Watts and Fendley Are Given Humble Promotions

Frank A. Watts

F. T. Fendley

Humble Oil & Refining Company, Houston, has announced the promotion of Frank A. Watts, to the position of sales manager. The post is a newly created one in which he will have direct executive responsibility for Humble's sales department, under the general direction of Hines H. Baker, vice president in charge of manufacturing and sales. Watts was formerly purchasing agent and will be succeeded in that place by F. T. Fendley who has been assistant purchasing agent.

Watts has been with the Humble Company since 1919 and during the ensuing 25 years has held a number of positions with increasing responsibility. Since 1938 he has been purchasing agent and for the preceding ten years was chief engineer for the sales department. He was asked by the government to assume the post of director of the materials division, Petroleum Administration for War, in Washington, in 1943, and served in this capacity for more than 15 months.

Fendley is also a veteran of 25 years service with Humble, having been connected with the purchasing department since March, 1933. After 10 years in the engineering department at the Baytown refinery, he moved to the refining engineering department in Houston, from which position he went to the purchasing department in 1933 as assistant buyer. During Watt's absence in Washington, Fendley was acting purchasing agent, and has been assistant purchasing agent since April, 1944.

Varied Oil Expenditures Disclosed by DSC Report

Defense Supplies Corporation has authorized total expenditures of $10,350,000,000, of which $800,000,000 has been canceled or assumed by private industry, it was disclosed January 8 by Secretary of Commerce Jesse Jones in a review of activities of the Reconstruction Finance Corporation.

Under its program of purchasing strategic and critical materials, paying extraordinary transportation costs on oil, coal and sugar, making advances to contractors for the purchase of materials and the payment of subsidies, DSC has disbursed $5,200,000,000, and has had receipts from the sale of materials, repayment of advances, etc., of $3,600,000,000.

Purchasing operations have included commitments for the purchase of aviation gasoline in the sum of $2,976,000,000, for resale to the Army and Navy, and alcohol for synthetic rubber to the amount of $892,400,000, the report showed.

Subsidy payments on stripper well production from August 1 to December 31, last, totaled approximately $11,300,000, with some claims not yet settled, and payment of extraordinary transportation costs to the end of 1944 included $297,400,000 on crude and products from the midwestern and southwestern sections to the eastern seaboard and $4,000,000 on the movement of crude from Texas and Louisiana to midwestern refineries.

Loans and advances included $190,400,000 for construction of facilities for the production of 100-octane gasoline, of which $84,400,000 has been repaid.

DSC has made a substantial profit on operation of the two big pipe lines, it was shown. A total of $438,200,000 has been expended for the purchase of oil and products and operation of the lines, and receipts from the sale of oil and operations have totaled $505,700,000.

PIWC Discuss Oil Pact And OPA Questionnaire

Progress made by the State Department in developing a revised Anglo-American petroleum agreement may be an outstanding subject of discussion at this week's meeting of the Petroleum Industry War Council, members of which will confer with Charles B. Rayner, petroleum adviser to the State Department, regarding the three provisions of the industry's recommended treaty on which the department seeks light.

There were indications that the reformed agreement might still be the subject of concerted industry opposition if offered to the Senate for ratification as a treaty, with possibilities that it might finally be put through as an executive agreement requiring no Congressional action.

The council meeting also is expected to give consideration to the crude and refinery price investigation initiated by the Office of Price Administration, plans for which are to be discussed January 15 at the first meeting of a recently-appointed industry committee (THE OIL WEEKLY, January 8) which will cooperate in the development of the questionnaire to be sent out to possibly as many as 15,000 producers of all types in all sections of the country.

Gas Conservation Group To Confer on January 17

The Texas Railroad Commission has announced that the newly-created advisory committee of petroleum engineers to advise on conservation and elimination of natural gas waste, will meet January 17. This will be the first meeting of the committee and work will get under way which it is hoped will ultimately result in adequate conservation measures to stop all waste of gas.

William J. Murray, Jr., of Corsicana, has been named state chairman of the committee. Sub-chairman will be designated from the Abilene, Midland, San Angelo, Pampa, Wichita Falls, Kilgore, Palestine, Houston, San Antonio, and Corpus Christi districts.

Fields which are known to have the heaviest gas waste will be first on the list of those to be studied.

Texas Leases Offered

Sale of mineral rights on 143 tracts of University of Texas land will be held in Austin, Texas, February 16, by the board for lease of University lands. The tracts are located in Andrews, Crane, Reagan, Upton, Crockett, Pecos and Cooke Counties.

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KENNETH A. COVELL, Fort Worth division production engineer for The Pure Oil Company, has been transferred to Chicago headquarters as chief production engineer, succeeding R. H. Carr, who has been placed in charge of production research. Covell is a graduate of Oregon State University and was with the Indian Territory Illuminating Oil Company prior to joining Pure in 1932.

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THOMAS B. ROMINE, Sinclair Prairie Oil Company, was elected president of the Fort Worth Geological Society, while W. J. Nolte, Stanolind Oil & Gas Company, and Spencer R. Normand, Independent Exploration Company, were chosen vice president and secretary-treasurer, respectively.

Revision of Anglo-American Oil Pact Seen as It Is Withdrawn from Senate

Revision of the Anglo-American petroleum treaty was assured January 10, when President Roosevelt asked the Senate to return the agreement which he sent to it for ratification last August 24.

Acknowledging that opposition of the oil industry was responsible for revision, the President in his message of recall said further negotiations would be undertaken with representatives of the British government "to remove grounds for misunderstanding."

At the time it was signed, Mr. Roosevelt said, he thought the agreement "constituted an important step forward in removing possible causes of friction in international trade in petroleum and promoting cooperation among the nations in the development of that trade."

However, he admitted, fears arose as to the scope and effect of the agreement, and there was much concern over the possibility that it authorized legally inconsistent acts by the industry and might be potentially harmful.

"It is my belief that these fears are without foundation," he said. "Certainly, no such possibilities were intended or designed by the American representatives who negotiated the agreement.

"It would be unfortunate if an understanding on international trade in petroleum was delayed or prevented through misunderstanding."

At the State Department, Secretary Edward R. Stettinius refused to specify the actual changes that will be made in the agreement, although it had previously been indicated that the draft submitted last month by the PIWC would be the foundation on which the revision would be written.

While officials believe that the industry version would be much weaker than the original agreement, they indicated that there were only three major points on which they might not be able to go along with the national oil policy committee which drafted it.

Those points—the inconsistent treatment of Alaska and Trinidad in the definitions of "United States" and "United Kingdom"; the reservation to each government of the right to limit oil imports, and an exemption for the domestic industry from anti-trust prosecution for any actions taken at the request of the government—are to be discussed with industry representatives this week.

Stettinius explained that the department's position in having the Senate return the agreement was "to permit consideration of the best way to achieve the fundamental purposes underlying the agreement, preventing friction between nations growing out of problems of foreign oil, and assuring to all an adequate supply."

No Ickes Recommendations

While department officials and industry representatives are discussing the matter in the department, it is possible the oil situation will be touched upon in the Senate foreign relations committee January 17, when Stettinius is to meet with it in closed session for a general discussion of foreign affairs.

At PAW January 11, Administrator Ickes said he had made no recommendations on the treaty as yet. PAW officials, he said, have the agreement under study and when they reach a decision will take it up with the members of the delegation which participated in the negotiations. He indicated, however, that before this is done, he expects to talk with members of the PIWC committee.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED Jan. 13	Jan. 6
Alabama	250	200
Arkansas	81,000	80,600
California	883,000	889,000
Colorado	9,200	9,500
Florida	50	50
Illinois	204,400	205,400
Indiana	12,700	12,900
Kansas	272,650	229,900
Kentucky	29,700	33,150
Louisiana	359,700	360,650
North Louisiana	70,450	71,400
South Louisiana	289,250	289,250
Michigan	49,250	47,250
Mississippi	50,150	49,700
Missouri	100	100
Montana	19,860	23,430
Nebraska	1,000	1,000
New Mexico	104,050	104,050
New York	13,000	12,650
Ohio	6,950	7,050
Oklahoma	360,750	361,200
Pennsylvania	34,350	36,200
Tennessee	35	35
Texas	2,120,300	2,120,300
Upper Gulf Coast	552,650	552,650
East Texas Field	370,900	370,900
Rest of Eastern Texas	144,100	144,100
Lower Gulf Coast	243,900	243,900
Southwest Texas	78,400	78,400
South Central Texas	20,050	20,050
West Texas	478,550	478,550
North Texas	143,050	143,050
Panhandle	88,700	88,700
West Virginia	8,150	7,050
Wyoming	95,000	98,250
Total United States	4,715,595	4,689,615

United States Company Making Bolivian Survey

The Bolivian government is spending $450,000, United States currency, in an exhaustive study of the oil fields of the country with a view to expanding crude production and building refineries, according to reports reaching the Department of Commerce.

The survey is being made by the Foster Wheeler Corporation, New York, and will cover the location, quality, water supply, electric capacity and strategic position of the fields.

Money for the work, described by Bolivian officials as the most important industrial enterprise planned for the country, is being secured from the Bolivian Development Corporation. Olaf S. Sundt, State Department petroleum expert, and William J. Kewmitzer of the Foreign Economic Administration visited Bolivia last fall with a view to determining what materials were necessary for the project and for expanded drilling operations, and to arrange for the expediting of their procurement.

Would Tie Stripper-Well Subsidy Plea in with OPA Cost Survey

Congressional legislation toward making the present subsidy payments on stripper wells permanent, was the main subject considered at the meeting of the executive committee members and state vice presidents of the National Stripper Well Association, in Fort Worth, Texas, last week. Steps toward effecting such legislation were discussed and it was decided to base the association's fight for a permanent subsidy on a long-range conservation program.

It was pointed out by Howard J. Whitehill, president, that the stripper well industry cannot be thought of as a static part of the oil industry. As flush production declines, wells become strippers. Thus as old producers are exhausted and abandoned there are continual additions to stripper territory.

Stripper production cannot be maintained in competition with flush production, Charles F. Roeser, past president of the Independent Petroleum Association of America, contended. He predicted that the price of crude will never again rise higher than $2.25 per barrel, because at this price crude petroleum comes into competition with oil shales. "Therefore," Roeser said, "stripper oil production will need protection against price fluctuations that will carry below the point of profitable operation of these wells."

Answering his own question as to how important stripper wells are, Roeser emphasized that more than 500,000 barrels of oil daily comes from this type production. Also approximately four billion barrels of the nation's total reserves consists of stripper territory. He also cited figures to show that 400,000 barrels of crude oil a day is being lost to the reserves by abandonments which amount to about 30 wells daily.

Subsidy payments for conservation of natural resources are a well established policy of the government. The present payment of 35 cents per barrel on stripper wells is not nearly enough, in the opinion of some who spoke at the meeting. Whitehill said "We thought the OPA would give us 50 cents, but the next thing we knew the payment came out as 35 cents."

The association plans to tie its demand for the permanent premium legislation into the cost survey which OPA is now beginning. Seven members of the association are on the oil advisory committee.

Rig Builder Increases Set

The War Labor Board, through its regional offices, has announced minimum approvable hourly rates pertaining to increases in wages of rig builders in the petroleum industry in 27 states. Approval of the regional WLB, for the rates, in the area involved is necessary, but the rates are not automatic or mandatory.

Rates as announced are: Rig-building foreman (crew pusher) $2.75; rig builder, $2.50; rig builder helper (apprentice), starting rate, $1.50.

States included in the announcement are: Alabama, Arkansas, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Utah, Wisconsin, and Wyoming.

Full particulars on the rules governing wage increases may be obtained from the regional War Labor Board offices of the districts including the above mentioned states.

East Coast Needs Being Met but Situation Tight

The East Coast supply situation is very tight and will continue so through the winter, but PAW so far "has made the grade" and is confident that rationed needs of the area will be met in both gasoline and heating oils, Administrator Ickes told a press conference January 11.

With tankers expected to be withdrawn from the service, Ickes said, it will be necessary to depend upon the pipe lines and railroads. The tank car situation is none too bright, the 50,761 cars in operation for District 1 on December 15 being far below the number available at the peak of the rail movement in 1943.

PAW Says Existing Drilling Rigs Entitled to First Claims on Materials

In a letter addressed to all manufacturers of petroleum equipment, petroleum operators, and suppliers and distributors of equipment, C. P. Parsons, director of the materials division of PAW has called attention to the necessity of close cooperation by these groups to meet the problem of repair parts for equipment. He notes that many operators are becoming concerned with the increasing number of new rigs placed in operation as they affect the availability of repair parts necessary to maintain the 1850 rotary rigs now running in the United States. PAW has also been put on the alert with the increasing number of requests received from operators for assistance in obtaining repair parts and supplies for drilling rigs.

PAW recognizes that both existing rigs and the new ones are important, but inclines to the view that existing rigs are entitled to first claim on materials and manufacturing facilities. This fundamental relationship between existing rigs and new rigs is seriously out of balance, according to PAW, so far as repair parts and replacements are concerned, and must be corrected if the war program of maintaining an adequate supply of oil is to be effectively carried out. To remedy the situation immediately, a cooperative effort is essential, and PAW has suggested the part that manufacturers, operators and distributors must take.

Procedure Outlined

Petroleum operators including drilling contractors are asked to anticipate their requirements for repair materials as far in advance as possible, realizing that the quantities are limited. They should ask for only those critical items necessary to keep their equipment in good working condition. Operators must also rate purchase orders in accordance with P-98-b, that is, AA-1 for maintenance, repair and operating supplies and AA-2X for capital additions. The following instructions are given as an aid in solving the problem.

1. Use AA-1 rating on purchase orders for repair parts without PAW countersignature.

2. Use AA-2X rating on purchase orders for complete units or rigs as specified in Paragraph C of Schedule B to P-98-b Amended, without countersignature.

3. Use AA-1 rating on purchase orders for complete units for replacement of items worn out or destroyed and get countersignature of the district Director of Materials, PAW, before placing order with supplier or manufacturer. Foreign operators will have their orders countersigned by Materials Division, PAW, Washington.

4. Review outstanding purchase orders to which AA-1 rating has been applied for complete units or rigs and if the operator feels he has complied with the proper use of the rating, then he should get the order validated by countersignature of the District Director of Materials. Otherwise he should change the rating to AA-2X.

5. All purchase orders should show an actual date on which material will be required by the operator or date of delivery promised by the manufacturer.

PAW will assist by bringing to the attention of manufacturers specific items which are in short supply, and will also continue to assist manufacturers, supply houses, and petroleum operators in obtaining the materials required for the completion of projected operations.

Manufacturers can assist by realizing the importance and necessity of repair parts and by scheduling the production of these items in increasing quantities even at the expense of producing complete items for replacement or new drilling rigs.

There has been some indication that manufacturers of drilling equipment are less concerned with the supplying of parts than they are with the supplying of complete assemblies. It is believed that some assemblies are frequently discarded because one or more small parts could not be obtained, with the result that the users have purchased complete assemblies which required both more material and more man hours of work to produce.

Operators in the field have also been slowed down in numerous instances because they were unable to operate due to failure in obtaining small parts.

Suppliers and distributors can assist in much the same fashion as manufacturers by realizing the urgency of repair parts and continuing to support, with manufacturers, the requirements for items of this nature.

Petroleum Equipment Suppliers Association has asked top management of its entire membership to give closest attention to delivery of repair parts.

PARTS

PARTS

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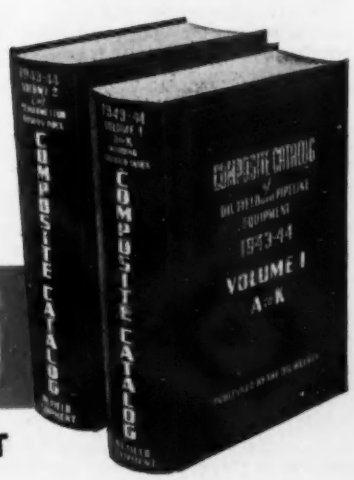

The COMPOSITE CATALOG

OF OIL FIELD AND PIPE LINE EQUIPMENT

Tax Review

A Regular Feature of THE OIL WEEKLY
By WILLIAM O. TAYLOR*

This column is designed to review legislation, judicial decisions, administrative rulings and policies, and topics which are of current interest to the oil industry, from a tax viewpoint. It will be published as frequently as new developments seem to require.

Election as to Treatment of Intangible Development Costs

MANY taxpayers, in their returns for the year just ended, will be required to make an election as to how they wish to treat development costs for tax purposes, i.e. whether to charge them off as current expenses or capitalize them and spread them over the producing life of the well in the form of deductions for depletion and depreciation. This optional treatment has been in effect for many years, but a new election is permitted by *Treasury Decision 5276* for taxable years beginning after December 31, 1942. The election must be made in the return for the first year beginning after December 31, 1942, in which the taxpayer incurs such costs. Thus a taxpayer who incurred development costs in 1944 but who did not do so in 1943 must make his election in his return for 1944, whether or not he has any taxable income for that year. This is true even though he may have made an election in 1942 or in some prior year. Inasmuch as the election is binding for all future years, most taxpayers will have no difficulty in deciding to charge off development costs as current expenses.

Must Make Statement

The government's regulations provide that the election is to be made by "a clear statement" in the return, and that "the absence of a clear indication . . . of an election to deduct" development costs will be treated as an election to capitalize them. Literally, the above language appears to require that there be placed on or attached to the return a statement in words as to the election which the taxpayer makes. Under prior regulations the election was made merely by treating development costs in the desired manner in the computations on the return. This might constitute a sufficient election under present regulations, but it is advisable to incorporate a statement in the return as well as to treat development costs in a manner consistent with the election which the taxpayer wishes to make.

If an extension of time is allowed in which to file a return, the election need not be made in the tentative return which is required to be filed at the regular time. In fact, it seems clear that an election made in the tentative return is of no legal consequence whatever, and if a taxpayer made a clear election to expense development costs in a tentative return but failed to do so in his final return he would almost certainly be treated as having made no election; i.e. his development costs would be capitalized.

Under the new regulations the option is granted with respect to development costs *incurred* by an *operator*. Prior regulations stated, in effect, that the option was granted to *taxpayers* who made *expenditures* for such costs. The significance, if any, of these seemingly slight differences in terminology is not apparent, for no controversy had arisen under the prior regulation which the new language would clear up. However, they do indicate several situations in which taxpayers would do well to proceed with caution.

Definition of "Operator"

An "operator" is defined in the new regulations as "one who holds a working or operating interest . . . either as fee owner or under a lease or any other form of contract granting working or operating rights." In instances where the owners of undivided interests in a lease have entered into a joint operating agreement, it might be thought from the above definition that the option lies solely with the one who is designated as operator. Non-operators should not assume that this is true and should make a clear election in their own returns with respect to their share of development costs incurred under such an arrangement.

The situation of the owner of a carried interest is not clear, due to a conflict between the government's position as to the tax status of such an interest, set out in *G.C.M. 22730*, and the principles established in *Reynolds v. McMurray*, 60 F. (2d) 843, *T. K. Harris Land Company v. Commissioner*, 112 F. (2d) 76, and *Sunburst Oil & Refining Company*, 23 B.T.A. 829. During the pay-out period, *G.C.M. 22730* states that the carried interest derives no taxable income from production and the view expressed therein is such that the carried interest is not entitled to deduct any development costs. The cited cases, on the other hand, hold that the carried interest derives taxable income as soon as production begins (although the carried interest's share in production is retained by the operator by way of re-imbursement) and may deduct development costs as they are paid out by production. In the latter case, an election as to the treatment of development costs would apparently be required in the year in which production begins. A taxpayer who was not required to make an election in 1943 but who is being carried as to a lease which first became productive in 1944 should plainly state his election in his 1944 return, and if he is following the rule of *G.C.M. 22730* and therefore does not report either income or expenses (because the project is still in the pay-out period), he should so state.

By the same token, if a taxpayer made an election in his 1943 return *solely* because of development costs on a lease as to which he was non-operator under a joint operating agreement or as to which he was a carried interest, it would be advisable to make an election in his 1944 return also, if he incurs development costs on some other project where he is obviously the "operator." In that case he will be protected by having made the proper election in the latter return if it should eventually be decided that his election in the 1943 return was meaningless because, under the regulations, he was not entitled to an election in that year. This possibility seems remote in the case of the usual type of joint operating agreement, but is not necessarily so in the case of a carried interest.

If a taxpayer files his returns on the accrual basis, he must deduct development costs in the year in which the work is done, regardless of when it is paid for. If a well was still drilling on December 31, 1944, costs incurred up to that time are deductible in the 1944 return. But if a taxpayer files on a cash basis, his development costs are deductible in the year in which they are paid for. It seems extremely doubtful whether the use of the word "incurred" in the new regulations as compared with "expenditures" in the prior regulations requires the election to be made in any year other than the one in which the taxpayer is entitled to the deduction.

Since the election must be made in the return for the first year after December 31, 1942, in which development costs are incurred, it is important to know what is included in such costs. The phrase used in the regulations is "intangible drilling and development costs," and in general it includes all expenditures involved in drilling a well and preparing it for production except expenditures for equipment which has a salvage value. The regulations specifically refer to such preliminary work as clearing ground, draining, road making, surveying and geological work as are necessary in preparation for the drilling of wells. Where geophysical work is done on acreage already under lease for the purpose of locating a well, the government allows the cost of such work to be deducted as *development expense*. A taxpayer should not assume, therefore, that he is not required to make an election merely because he has not spudded a well during the year.

First Year Requirement

The election must be made in the first year in which the taxpayer incurs development costs, regardless of whether the well is a producer or a dry hole. But if an election is made to capitalize development costs generally, a separate election is permitted with respect to dry holes and it must be made in the return for the first year in which such a well is *completed*. Thus if a taxpayer elected in his 1943 return to capitalize development costs and then completed a dry hole in 1944, he will be required to elect in his 1944 return as to how he wishes to treat development costs on dry holes.

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F. H. McGUIGAN, West Texas district geologist for Lion Oil Refining Company, was elected president of the West Texas Geological Society. Leo J. Newfarmer, Shell Oil Company, and Alan B. Leeper, Honolulu Oil Corporation, were chosen vice president and secretary-treasurer, respectively. A dinner meeting of the organization will be at Midland January 17.

*The author is an attorney associated with the firm of Butler and Binion, Houston.

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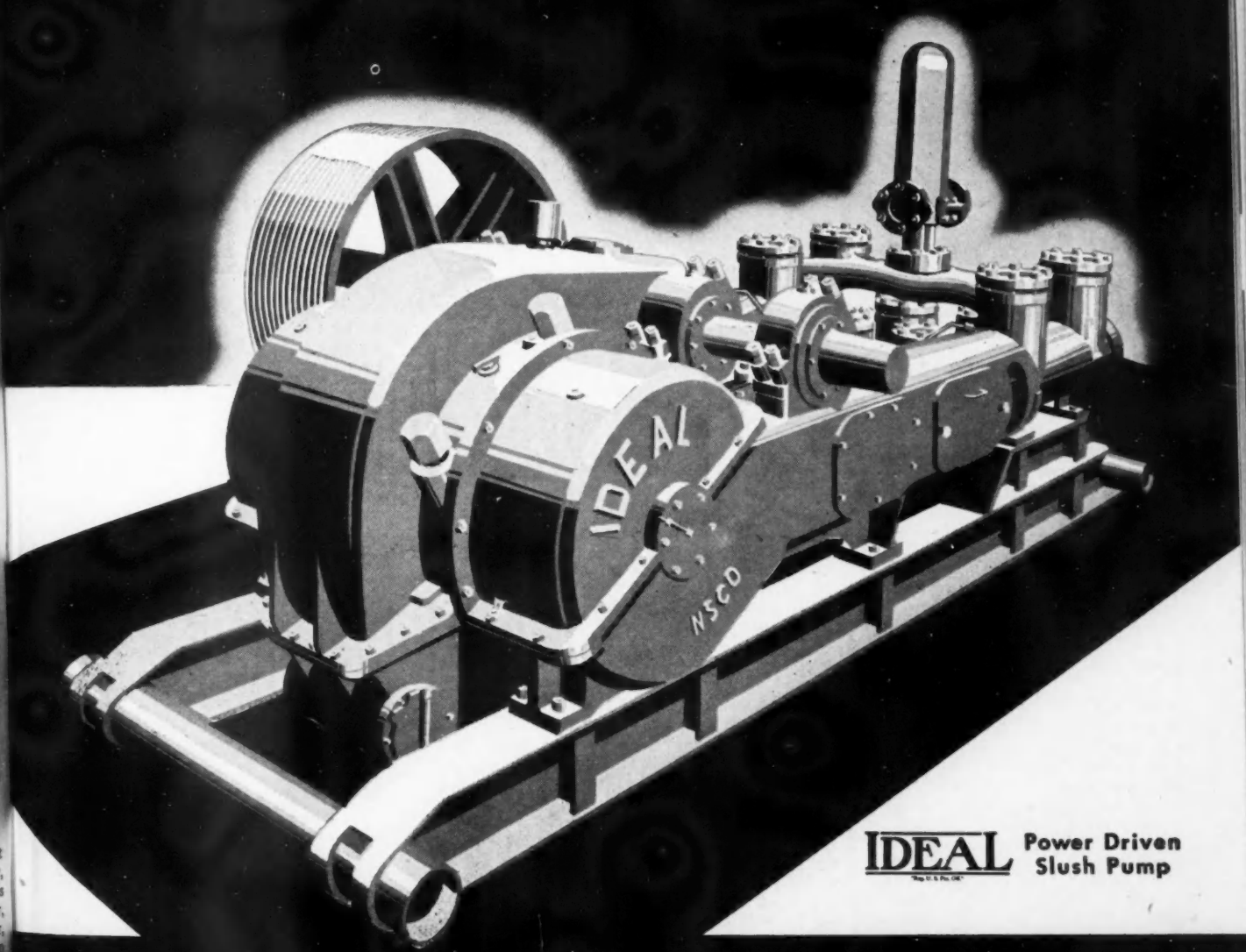

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Applications range from tableware to electrical circuit breakers and include plywood adhesives, buttons and baking enamels.

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Important magnetic wire insulation.

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Polyvinyl Acetate
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Cellulose Acetate
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Exceptionally beautiful in clear and tinted varieties. Bottle caps, dishes, battery boxes and medical equipment. Refrigerator parts, radio and television parts, transparent tubing.

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Exceptionally wide range of applications from subway seats to chemical tubing and pipe. Nozzles, funnels, novelties, lacquer pump pistons, hose connections, large and small diameter pipe and tubing "Saran."

Polyvinyl Chloride
"Koroseal and Vinylite Q." Shower curtains, bathing caps, electrical cable coating, tank linings, flexible tubings and waterproofed fabrics.

Polyvinyl Butryal
Interlayer for safety glass. Material for Army raincoats, self-sealing fuel tanks, stirrup-pump hose.

Polythene
A vinyl type resin, looks like gutta percha, used to cover wires and cables. Important in war uses.

Acrylic Resins
Binders for wood, rubber, glass, textiles and metals. Coatings for fabrics. Dentures. Medical, surgical and industrial illuminating instruments. Optical lenses, magnifying glasses, safety goggles, and artificial gems. Bomber nosepieces.

PROPYLENE

Alkyd Resins
Have great outdoor durability with quick-drying and excellent adhesion to surfaces of many types, including metal. Automobile finishes, finish for tanks and ships, durable house and marine paint, sealers and lacquers for furniture. Military uses run into hundreds.

Acrylic Resins
Binders for wood, rubber, glass, textiles and metals. Coatings for fabrics. Dentures. Medical, surgical and industrial illuminating instruments. Optical lenses, magnifying glasses, safety goggles, and artificial gems. Bomber nosepieces.

Allyl Resins
Glass substitute in all airplane openings that have to be covered.

ADAPTED FROM WEIL AND ANHORN'S "PLASTIC HORIZONS"

New Trends in Utilizing Petroleum Resources

Chemical engineers are learning much about processing not only oil but natural gas as well and promise is that mankind will enjoy many materials not heretofore had because as a raw material petroleum holds greater promise than coal tar which is basis for at least a half million derivatives. Caution is sounded about the influence of politics

By GRADY TRIPLETT
Editor, Petroleum Refiner

NOT many years ago it could have been learned by the reading of any standard text on chemistry that the petroleum gases were inert, therefore worthy of little consideration as chemical raw materials. Fortunately a few men persisted in this field of research, either in doubt or in ignorance of this decree of classical chemistry, with the result that today there is a chemical industry based on oil and gas which already is encroaching on fields previously held by other raw material sources, and it promises to provide mankind with materials he has not heretofore enjoyed.

You are familiar with some of these accomplishments. Both butadiene and styrene, major ingredients of GR-S rubber, are being made from refinery gases and products of natural gasoline plants. Toluene, the explosive of TNT, is the result of processing of naphtha. The accomplishment of more than 500,000 barrels of fighting-grade aviation gasoline made daily in this country is in large measure the result of chemical processing of hydrocarbons.

Less attention has been drawn to other accomplishments, some of which may in time overshadow the contributions to military success. Ethylene, a gas from catalytic cracking, is being combined with other chemicals to provide a compound for the ripening of oranges and other fruits. It can be used to stimulate the growth of potatoes by treating the seedlings. Butylene, another refinery gas, stimulates the growth of fruits and nuts. By processing, methane, (natural gas) or by the oxidation of butane (bottled gas) ammonia can be produced. These have been grouped for the purpose of drawing attention to what petroleum may have in store for agriculture. Ammonia is high on the list of fertilizer chemicals and common gases are finding application as growth aids. It is no wonder that one oil company has established a laboratory for further investigation in this field.

And Other Uses

The refining industry has embarked on the manufacture of a comprehensive list of the alcohols which are essential in the finishing of plastics. Methane may be processed for the production of formaldehyde, another of the plastic chemicals, which the consumer meets frequently in bakelite. Even the resins, the phenols and the acids upon which the plastic industry thrives are being produced from oil and natural gas.

Ethylene, previously listed as a stimulant for fruit ripening, can by other processing be adapted to the operating room as an anaesthetic. There is a petroleum ingredient in the plexiglas nose of our bombing planes. By combination with chlorine, a by-product of methane becomes methyl chloride, which is widely used as a refrigerant. Ethylene and chlorine have a part in the making of tetraethyl lead, the anti-knock compound in motor fuel. By adding another step in processing these become ethylene dichloride, which is used in the manufacture of chlorox and in making ethylene glycol, a popular anti-freeze. Hydrocarbons from oil could take the place now held by coal in the making of nylon.

Look at Coal Tar!

These are but a few of the existing and known uses of hydrocarbons from oil and natural gas. Because they are identical with much that previously has come from coal-tar chemistry, the two raw materials are accepted as rivals. When it is recalled that coal tar is the basis for at least a half million derivatives, the prospect for oil becomes impressive. The comparison, however, is inadequate. Coal tar is made up largely of only the aromatic hydrocarbons. In crude oil are found the paraffins, the olefins, and the cycloparaffins as well as the aromatics.

As a raw material petroleum is a far richer source than coal. Here is the estimate of Dr. Gustav Egloff, director of research of Universal Oil Products Company:

"In view of the great number of hydrocarbons available as starting materials it is not unlikely that over a million new organic compounds will be produced from petroleum and natural gas."

It should be noted that this figure applies to a possible million *new* compounds. Since his estimate is commonly accepted in petroleum research, it becomes evident to the layman that crude oil and natural gas are raw material sources of prime importance in the world of chemistry.

Few of the products that finally will be made from these materials exist in oil when it is brought from the crust of the earth. The combinations of hydrogen and carbon that exist in nature are sufficient to bewilder the person not privileged to follow them in processing. Even so, the new science built on chemistry in oil is bent on taking the molecules that exist and converting them into other molecules. This is known as changing the atomic structure of the molecule.

The popular designation is petrochemical processing. Trivial amounts of toluene exist in crude oil, in a few instances it is substantial. But petrochemistry gave no attention to natural toluene when it was charged with providing the explosive for the demolition bomb. It set about to take molecules of other atomic structure and convert them into molecules of one type, designated by the chemist C_7H_8, which you will recall means that it has seven carbon atoms and eight hydrogen atoms in each hydrocarbon.

Similar but not identical methods take a refinery gas and convert it into butadiene, C_4H_6. By converting propane to ethylene, the latter becomes the source of styrene. Details of the methods by which these chemical changes are accomplished have not been made public. It is enlightening and encouraging to know that these and other chemical accomplishments now are well established and that the petroleum research chemist is ready to direct his efforts to peacetime uses of these products once military requirements are history.

While the accomplishments of petrochemical processing are impressive because of their contribution to military sucess, only a few of the possible things have been done. Doubtless it will be many years before the chemical catalogs list the million new organic compounds which the chemical engineers know to be available from petroleum and natural gas.

Influence of Politics

The development, however, is under way and its scope will have bearing on the welfare of the United States, especially upon Texas and the states from which we are drawing the major part of the hydrocarbon raw materials. The extent of this development will be shaped by many factors other than the science of petro-chemistry. The nature of the patent laws under which men work will have its influence. The form of economics under which we live will determine whether public or private capital fosters the industry. Even now there is controversy over the question of whether to use grain alcohol or refinery gases as

This paper was prepared for the Texas Statistical Council.

the raw material for making butadiene. It should be noted that politicians have been more vociferous than scientists in this controversy. The future of chemical rubber is so linked with international politics and diplomacy this new product cannot be examined solely on its merits as a useful product.

Tracing the development of petroleum refining into petro-chemical processing may give light on what is taking place and promises to come about from the processes themselves.

Petroleum was for 50 years a process of simple distillation. Crude oil was pumped into a still and heated. Since some of it would vaporize at low temperature and the remainder at successively higher temperatures, the refiner reduced crude oil to several products by diverting these vapors into different vessels, chiefly by reference to the temperature scale. Thus he produced light naphthas, gasoline, kerosine, furnace distillate and fuel oil.

Gasoline, which incidentally was valueless in early refining, was that part of crude oil which would vaporize between two temperature readings on the Fahrenheit scale. Some of these physical specifications still prevail in reference to motor fuel. The chemistry of gasoline drew little attention, although the chemist came into the industry bacause gasoline contained impurities which had to be removed.

Thermal Cracking Development

The first outstanding development in refining was thermal cracking, wherein a cut from simple distillation, usually furnace distillate, was subjected to excessive heat and pressure for the purpose of breaking large molecules into smaller molecules. This breakdown converted some of the large molecules into those which would boil within the gasoline temperature range, and thermal cracking thus gained wide adoption because it added to the amount of gasoline that could be had from a barrel of crude oil.

The process also produced some very small molecules, known as fixed gas. They could not be used in gasoline because they would evaporate. Signal contributions to conservation were made when engineers designed equipment for using these gases as furnace fuel. By such the cracking process was in part self-sustaining in that it produced part of the fuel for its heat requirement.

Research chemists, who doubted the inertness of the petroleum gases, turned their attention to these products from thermal cracking. Out of their work came proof that the classical chemists were in error, for it was the process of polymerization by which these light hydrocarbons were formed into stable liquids. One method of doing this involves contacting the gases with solid phosphoric acid under controlled conditions of heat and pressure. Thus the amount of gasoline was increased by as much as 3 percent. Of more significance, however, was the discovery that this product of polymerization was of high anti-knock value.

This brief resume of polymerization should not be accepted as the whole story of the start of chemical processing in refining. It does reveal that it made a contribution by proving that petroleum gases are not inert, and the further fact that the chemistry of hydrocarbons played a role in the anti-knock specification of gasoline. There were corresponding researches of similar nature, for previously operating personnel in plants had noted that some crude oils produced better gasolines than the average on the knock-rating specifications. Polymerization was but one of the developments in a trend which now stamps petroleum as the raw material for a widening field of use.

Catalyst Appears

Polymerization established the catalyst as a working tool in both refining and chemical processing. A catalyst is a substance which will assist in a chemical or physical reaction and not lose its identity. Oxides of metal are thus used, so are natural clays and acids. Whatever the catalyst, it becomes fouled in use and either is discarded or revived, usually by removing carbon by application of hot air.

Recently catalytic cracking has taken a place beside thermal cracking and the greater part of the base stock for fighting-grade aviation motor fuel comes from catalytic cracking units. This gasoline of 100 octane or even higher is excellent evidence of the application of chemical processing methods to refining.

In catalytic cracking the charge is from straight distillation, usually furnace distillate. This is vaporized and passes over a catalyst, held in a bed, or it travels in contact with finely ground clay, or it flows countercurrent to clay moulded into pellets. Temperature frequently is higher than thermal cracking but the reaction takes place at low pressure. The several methods yield a gasoline base stock of high purity and high anti-knock rating. Other catalytic methods are under development. It is certain that the ordinary motor fuel of the postwar period will be produced by catalytic cracking as well as by thermal cracking.

Another contribution of chemical processing to high-octane gasoline is known as alkylation. Two common gases found along with crude oil, separated frequently from natural gasoline, and produced in quantity by catalytic cracking, are butane and butylene. For many years chemists knew of their value as anti-knock ingredients. Each, however, is a gas even at a temperature near freezing. As such they defied use in motor fuel because of the tendency to evaporate.

Only recently it was discovered that these gases could be formed into a stable liquid under controlled conditions of heat and pressure and in the presence of sulphuric acid as a catalyst. More recently hydrofluoric acid has been adopted as a more efficient catalyst in this process. Alkylation is similar to polymerization, except in the latter gases of even lighter density and of varying molecular structure are used. In alkylation only two gases are used as feed.

By alkylation the refining industry produces a liquid of 100-octane rating. It, other hydrocarbons in limited quantity, tetraethyl lead and base stock, are the combination that provide most of the aviation motor fuels for the armies of the United Nations.

Production of Butadiene

So much has been printed about the source of butadiene that the public is under the erroneous impression that alcohol provides a butadiene of quality different from that available from petroleum, or even coal-tar distillation. Whatever the source, butadiene is of one quality: C_4H_6, a chemical combination of four atoms of carbon with six of hydrogen. Without doubt a small quantity exists in most motor fuel. It and a few other compounds are the gum-forming elements which the chemist removes by several methods of treatment.

From no known source, however, is there a natural supply of consequence. When the need for a substitute for natural rubber became imperative, it was necessary to find methods of converting other molecules into the butadiene molecule. There are several raw chemicals available, also several methods of processing. Petroleum became a source material because it has a similar hydrocarbon, butane, C_4H_{10}. By removing four hydrogen atoms and not disturbing the quartet of carbon atoms, butadiene is made.

While studies were under way, the use of butylene, C_4H_8, came under consideration. It could be converted to butadiene by one step in dehydrogenation, whereas butane involved one step for reducing it to butylene and another for reducing that to butadiene. Both processes are now used by the petroleum industry.

Ethyl alcohol also is easily processed to butadiene. Until recently more than half the butadiene requirement for chemical rubber came from grain alcohol. It is interesting to add here that petroleum also is being used for making ethyl (or grain) alcohol.

Alcohol also is a source material for styrene, the other hydrocarbon required for making GR-S rubber. Propane, another petroleum gas, likewise is the source material for styrene. Both butadiene and styrene can be made from coal-tar and coke-oven operation. The several sources of this one hydrocarbon are evidence of the competition that exists on the one score of raw material.

Not a Synthetic Product

Absence of the word "synthetic" in reference to rubber may have been noticed in this paper. Failure to use it has been deliberate, since a synthetic product properly is an exact duplication of the natural product and the chemist so far has not accomplished this in rubber. From several sources and by several methods he can produce something akin to isoprene but his work is not a duplication of the hydrocarbon that is found between the body and the bark of the tree Hevea Brasielensis, which was growing on 8,000,000 acres of plantations in the Far East before Pearl Harbor. Instead we have what the chemist calls elastomers — artificial rubber or chemical rubber. It is not likely that the public ever will give up its favorite term "synthetic rubber" but it is well to know that it does not exist.

An interesting sidelight is the report that the Japanese are using isoprene as a source material for aviation motor fuel, while we use petroleum gases in making an ingredient for our GR-S rubber.

The conflicting estimates being made concerning the future of our chemical rubber industry are evidence of the confusion that exists. Questions persist for the reason that the industry has not arrived at answers. Will the industry continue after the Far East is wrested from the Japs? If so, will petroleum or alcohol provide its hydrocarbon content? How does chemical rubber compare with natural rubber? Will it be as cheap as natural rubber? These are some of the questions of public concern and of vital

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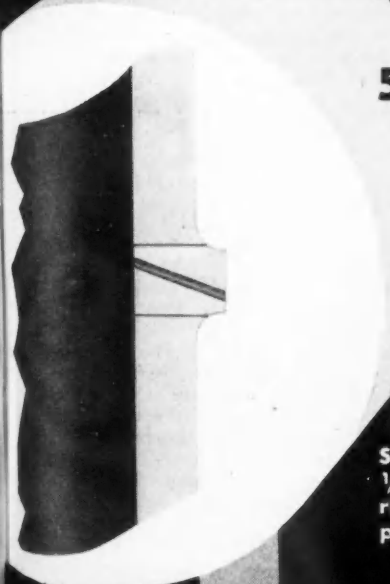

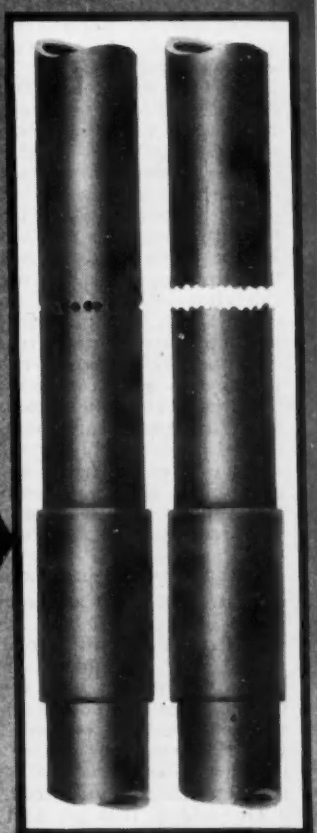

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concern to the petroleum, rubber and chemical industries.

It is certain that the industry will continue after the war. This, however, does not imply that natural rubber will not return to use. Some authorities estimate that it will require at least two years to regain full production of the rubber-tree plantations. During that period chemical rubber certainly will be produced.

Petroleum Logical Source

It should be noted that Washington has been the source of most of the effort to have grain alcohol given top rating as a source of butadiene. The petroleum industry has made no frantic plea for retention of its place as primary producer of this product. This is not for lack of faith in its source material or in its processing. All comparisons as to cost have been in favor of the petroleum source and method. Since butadiene quality is identical regardless of source, it would seem logical to expect petroleum to become the source.

Any answer given as to quality of chemical rubber will be out-of-date before it has consideration for the reason that quality is being improved almost daily. Instead of Buna-S, this paper has made reference to GR-S rubber. The letters designate government rubber—styrene. The reason for this designation is that the foremost of our chemical rubbers already is far advanced over the product which came out of Germany—Buna-S. That rubber never was developed in that country to the quality which would permit use of more than 50 percent of it with that much natural rubber in making automobile casings. The casings being sold to automobile owners in the United States today are more than 95 percent GR-S and they are giving better service than the tires made in Germany.

It is in order to admit that GR-S rubber still is not the equal of natural rubber for casings. Along with this it should be noted that the technologists of the rubber, the petroleum and the chemical industries do not doubt that chemical rubber will in time be superior to natural rubber for casings. Colonel Bradley Dewey, when resigning as rubber director, made the observation that the chemist had won every battle in competition with natural products, and predicted an identical result in rubber.

What the chemical-rubber industry promises is not a score of products but hundreds of products, each compounded from a chemical formula to meet required needs. An automobile casing may in time be composed of several chemical elastomers, each have qualities essential to its duty, such as cord covering, sidewall requirements, and tread.

Costs Being Lowered

Cost like quality defies answer because of progress. The average cost of GR-S rubber is still above 30 cents per pound. In November, 1944, however, Waldo Semon of The B. F. Goodrich Company expressed the opinion that this rubber can be produced for not more than 11 cents per pound in the more efficient plants but without allowance for depreciation and profit.

He added that natural rubber was over a period delivered into the United States at a cost of 12.2 per pound. With plant depreciation and profit items added, GR-S still can not match that figure.

Although the current trend is to the contrary, it is to be hoped that chemical rubber will be left to win its place in a free economy. It should win and hold whatever it merits from natural rubber. The raw material, and the industry that can provide its ingredients on this basis, will win on merit.

Regardless of what progress GR-S makes as a casing material, a rubber industry built on a free economy will be substantial. Already there are several well-established products of rubber-like nature. Neoprene, thiokol and chemigum are among them. More recently butyl rubber has come into substantial output and it has the distinction of being made solely from petroleum.

These and many other rubber products have qualities which cannot be found or have not been found in natural rubber. Accordingly they bring prices adequate to defray their manufacturing and sales cost. One of them will not deteriorate in contact with gasoline, hence it is used in lining hose at service station pumps. Butyl rubber defies both water and atmosphere, a quality which indicates that it will win over natural rubber as an insulation material for electric wiring.

The distinctive qualities of special chemical rubbers are such that an industry can be maintained in competition with a substantial natural rubber processing industry. It would seem that the plant capacity for making these essential rubbers would be adequate for the assurance this country must have against another loss of its natural-rubber source. Such an industry does not need political protection and cartels.

Petroleum and Plastics

It is not likely that the end of the war will bring the day of plastic automobiles, plastic houses and plastic clothing, all of which are technically possible. But the plastics industry is one of the more promising developments and petroleum derivatives will support it. The chart presented with this paper (see page 20) is from an article in the October 2, 1944, issue of The Oil Weekly by A. R. McTee. It indicates but a few of the products that can come from petroleum and natural gas for use in plastics and rayon products.

One of these products is formaldehyde, available either by processing natural gas (methane) or by the oxidation of butane. Formaldehyde also is available by distillation of wood or from coke-oven operation. Many of the other resins, phenols and acids in that table can be had from sources other than crude oil or natural gas.

It is pertinent to note here that one of the leading rayon manufacturers is building a plant for producing these chemicals. Although some of them are being made in many refining plants, no one oil company has thus far ventured into the manufacture of plastics chemicals to the extent of this one manufacturer of fabrics. Only one of the chemical rubbers, butyl, is being made by the petroleum industry. If memory is correct, only two refining companies make paints. If the petroleum industry is engaged in soap manufacture, it has escaped notice, although a petroleum product is the base of that wonder soap which lathers in sea water.

In these instances we get an insight into the attitude of the petroleum industry toward the chemical industry. Only two oil companies have formed subsidiaries for the promotion of the sale and use of petro-chemicals. Several times that number has formed partnerships with chemical corporations for that purpose.

Evidently the petroleum industry has no intention of moving into the chemical industry, other than the extent of making intermediates, products which can be used to complete the making of merchandise.

Comparatively Small Volume

One reason for this may be the volumes involved. All of chemical rubber, all of the hydrocarbons used in plastics and all of the coal-tar defivatives do not amount to 2 percent of the total production of crude oil and natural gas produced in this country. The annual requirement of 725,000 long tons of rubber is impressive when it stands alone. It is trivial in comparison with 350,000,000 tons of oil and gas, a figure about equal to what the petroleum industry processes and distributes in a year.

Another factor in this consideration is that the petroleum industry has no sales facilities for products finished into plastics. Its contact with the public is at service stations. If it followed its chemical possibilities into all avenues of distribution it no longer could concentrate on oil.

In its chemical developments this industry is clinging to the proposition of making a material which can be converted into finished merchandise elsewhere.

In this discussion frequent references have called attention to the similarity of crude oil and natural gas as raw materials. The two are composed of hydrogen and carbon.

For several reasons, however, natural gas deserves individual consideration. Over the past three years, oil field development has built more reserves of natural gas than of crude oil. Within that time, also, chemical engineers have learned much about processing natural gas. In particular the citizens of Texas are interested in this product, since the reserves have been developed here and there is a tendency to push the matter of their conservation into political channels.

Crude oil and natural gas are identical as to material—each is hydrogen and carbon. But crude oil is composed of a bewildering assortment of the combinations of these elements. Natural gas, however, is chiefly methane, CH_4, which professor E. P. Shoch of the University of Texas classes as "the perfect chemical raw material." To both the housewife and the boiler room fireman it doubtless is "the perfect fuel."

Either Gas or Oil

Either natural gas or petroleum may be used for conversion to most of the products which will go into plastics. Natural gas seems to offer advantages as a raw material for the classification under formaldehyde and acetic acid. These are the chemicals needed in both plastic manufacture and in the rayon fabric industries. It is significant that one of the leading cellulose fabric manufacturers is now building a plant near Corpus Christi, Texas, for processing natural gas to formaldehyde and these acids. Only recently it has announced construction of another plant, which will make butadiene from natural gas.

The acetylene-from-methane process, developed by Professor Schoch, is ap-

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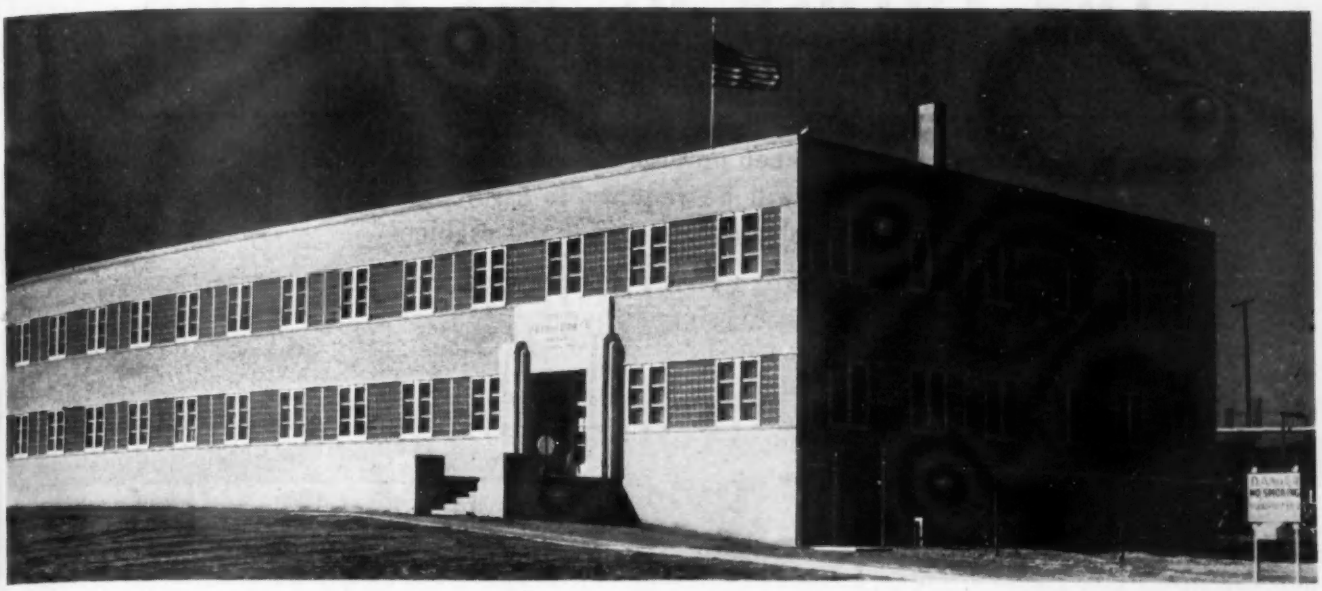


Main laboratory of Phillips Petroleum Company's new research plant at Phillips, Texas. In addition to this building which covers approximately 13,000 square feet of space, the plant includes an ethyl blending plant, a pure hydrocarbon manufacturing plant, a warehouse and three pilot plants for development of synthethic rubber polymerization, Philblack, and other products. Generally speaking, the Phillips, Texas, facilities will be devoted to the pilot plant or development phase of Phillips Company research. The plant now employs about 100 people and 75 more are expected to be needed before the end of this year.

proaching pilot plant stage. As to its significance, in Germany it was necessary to produce acetylene and make butadiene from it before Buna-S rubber could be produced. Methane can be converted to ammonia. Truly this one combination of a single carbon atom and four hydrogen atoms is the starting point for a gigantic chemical family.

But a single gas well has capacity sufficient to satisfy most of the present consumption centered in the products above. In relation to the amount of gas available, chemical processing of methane, simply is not impressive.

What is promising is the rapid development of processes by which dry gas can be converted into motor fuel. It is likely that one plant for that advance in processing will be built in Texas in 1945. It will by use of catalyst, heat and pressure so alter the simple molecule CH_4 that they link one with another to form liquid.

The strange thing is that this process is an adaptation of the German process, Fischer-Tropsch, which was developed for the conversion of coal into liquids such as gasoline. Recently this process has been under intensive development and the advancements are numerous.

From this, however, it should not be assumed that all our natural gas shortly will be piped off to new plants, which will convert it into motor fuel. It seems more likely that natural gas will continue to be used as now distributed, the major part of it going into domestic and industrial fuel channels, with a widening use in chemical processing. As a motor fuel source it will come along to augment the supply of crude oil.

Here we come to a matter, which seems to thrust itself into every consideration of petroleum—the matter of reserves. The divergent viewpoints so violently expressed on this subject are ample evidence that accuracy is elusive. One school holds to the proposition that crude oil reserves are so low that extreme measures of conservation are demanded for national security; the other school of thought holds that reserves of crude oil always have been provided in ample amount, therefore, there should be no fear.

Unless the processes by which crude oil and natural gas came into existence in ages past are still at work, certainly we are exhausting our supply. Wallace E. Pratt has cited the logical proposition that these processes are still at work. He suggests that natural processes, heat, pressure and catalysts have converted animal and vegetable matter into crude oil and natural gas. It seems logical. Still there is nothing to assure us that nature is working at a speed equal to our current requirement of more than a half million barrels of oil each day from the reserves of the United States.

Certainly the same attitude is one which acknowledges the possibility of diminishing supply. But this is no cause for alarm. Comparatively little of the beds which should contain crude oil and natural gas have been thoroughly explored. Even in the United States, where the search has been most thorough, there will be gigantic oil reserves uncovered in years to come.

The matter of conservation would be well served if men could agree on what the word means. In some circles it evidently means locking up our crude oil to await the next world conflict. In other circles the attitude seems to be one of unrestricted exploitation. Wise use would seem to be more in keeping with progress. And wise use permits interpretation from a thousand viewpoints.

When the piping of natural gas from Texas toward the eastern seaboard came to public notice last year, both public officials and private citizens raised objection. The contention seemed to be that the gas should be kept in Texas until industries took advantage of its existence and built industrial plants adjacent to the fuel source. At that time attention was called to the fact that coal then was being shipped from Oklahoma into Texas for the purpose of ore reduction; and that sand was being shipped from that state to a new glass factory near Waco.

Somehow it is difficult to see economic matters in proper perspective. In Texas we have a surplus of a natural resource, gas. Men insist that it be used, as their condemnation of field waste in flares proves. But wise use may come at the end of a pipe line in West Virginia as well as in a new factory built near a gas field in Texas.

When we became apprehensive as to reserves of crude oil and natural gas, it is comforting to return to the first part of this paper, wherein it was noted that men have learned that the petroleum hydrocarbon is a responsive chemical. It can be converted from an undesirable form into a desirable form. Likewise coal can be converted from its solid status to liquid status. That is true of oil shales and the tar sands of Canada.

However near we may be to the end of energy as stored in crude oil and natural gas, we are not near the end of energy as stored in coal, shale and other forms. As the need becomes imperative, the chemical engineer will find means for converting the vehicle of storage into a convenient form.

Admittedly we may in time exhaust our oil and gas reserves. We are not going to exhaust the other forms in which hydrogen and carbon have been and continue to be provided by nature.

The Future of Oil Finding

Non-economic measures needed to keep up production during war times but with return of normal conditions other measures will be required to assure adequate oil supply. Localizing oil in stratigraphic traps is the problem

By PAUL D. KRYNINE
Associate Professor of Petrology, The Pennsylvania State College

THE present shortage of oil and gasoline has brought to the attention of the public a situation which has been worrying the industry for several years already, namely, the problem of oil reserves and their most effective utilization. Oil underground can be pumped out of the well only at a certain rate of speed and the total amount of oil, although "large beyond computation" (Orton), is not immediately available to the industry, and as a matter of fact most of it has yet to be found. Present proven oil reserves add up to an amount which, if it could be produced at a uniform rate, would give a 15-year supply of oil. However, as oil wells begin to run down, their day by day production decreases. Hence this so-called 15-year supply could be stretched over a period of fifty years or more but under no circumstances could the present rate of production be kept up if we had to operate only on the basis of our present reserves, without adding some new, virgin, highly productive oil pools every year.

This problem of *oil finding* can be attacked in two ways: by discovering new oil pools; and by increasing production from existing oil fields. The first problem is geologic, the second technological.

When Normalcy Returns

Eventually these problems can be solved by improved industrial methods of oil finding and oil production. So far as the immediate realities are considered, these long range measures will not solve the present oil shortage and since we are currently engaged in a war, other measures, even non-economic ones, are required to increase production. The simplest one is to increase drilling and to keep in operation such wells which normally would be abandoned. This means that the industry must operate at a substantial loss, or that the price of oil must be raised. Under war conditions there seems to be no other way to cope with the present shortage.

When normal conditions return, however, other measures will be necessary to guarantee our future oil supply in sufficient amount and at a reasonable price. This means a vast improvement in our oil finding ability.

Petroleum is formed as a result of ordinary normal, sedimentary processes and is an integral part of sedimentary rocks. It is very abundant in rocks of all ages, but occurs mostly in the disseminated state. Concentrations of oil on a commercial scale cover only from one to

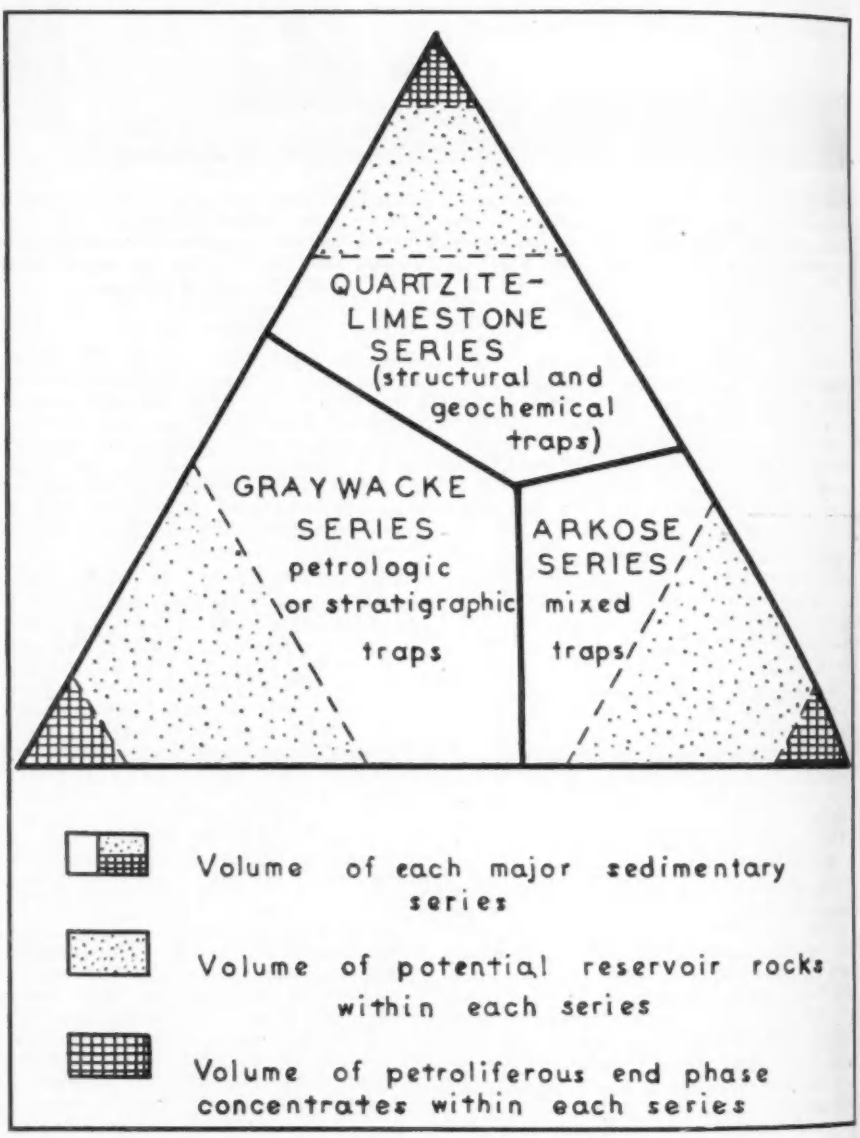
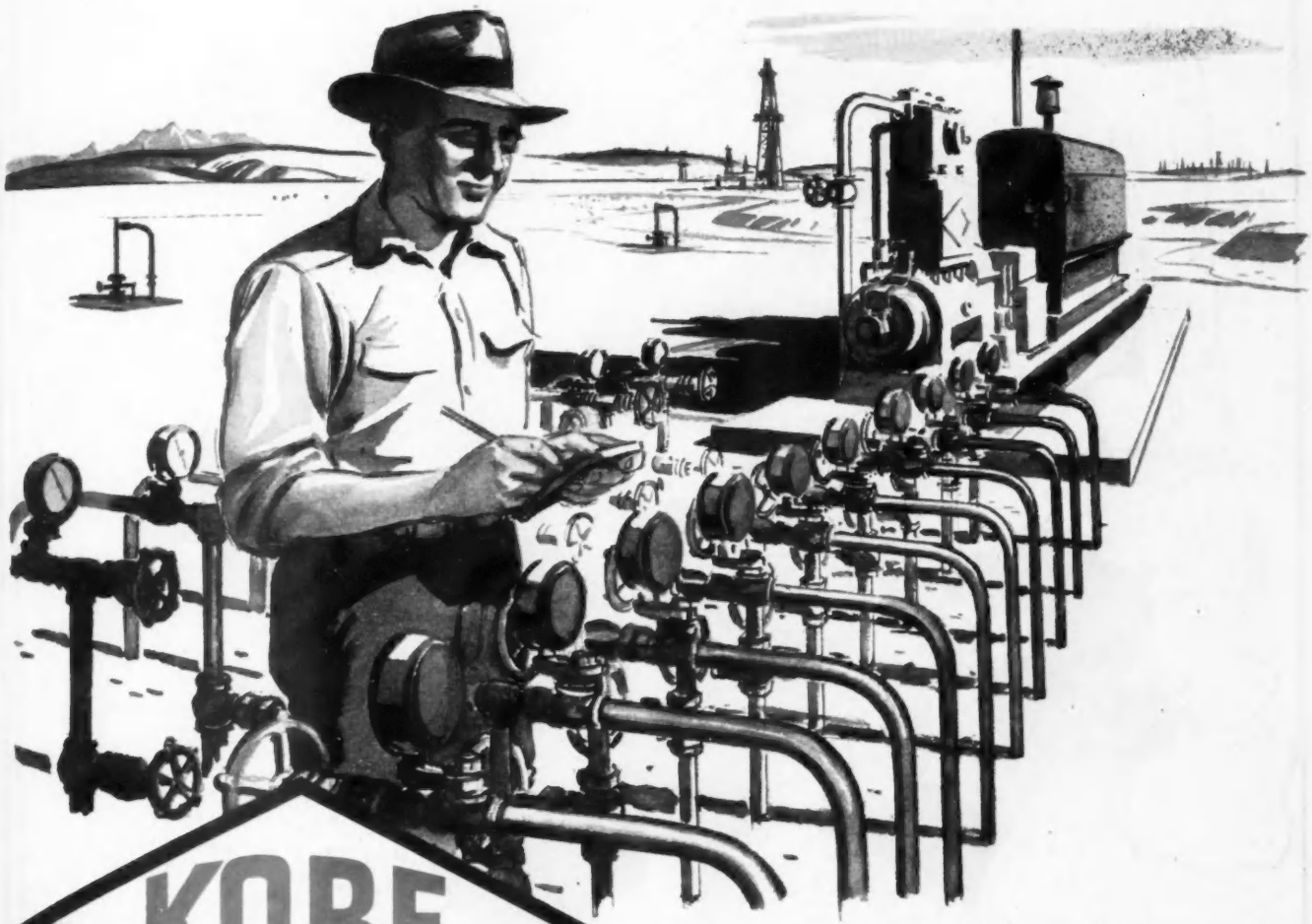


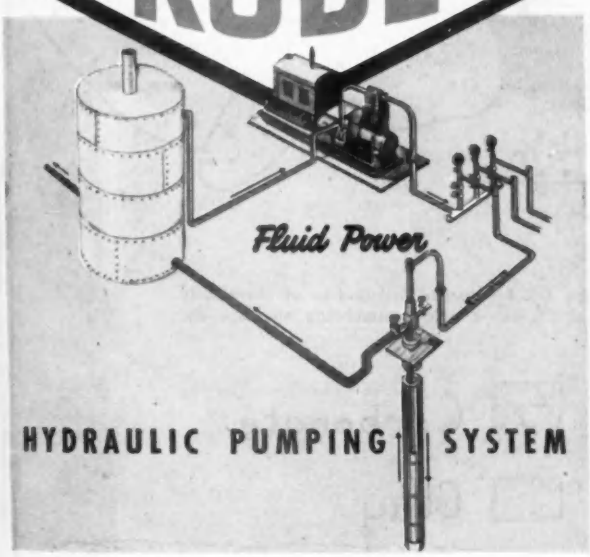
FIGURE 1
Relative distribution of the principal sedimentary types and their oil bearing potentialities

Reprinted from November, 1944, issue of Mineral Industries, The Pennsylvania State College, with permission of the author who made several revisions and furnished further figures.

GIVES THE *Pumper* A BETTER CHANCE



KOBE



Kobe pumping not only makes it possible for a pumper to handle more production, but enables him to do a better job more easily. Before the introduction of "fluid power", pumpers spent a large part of their time in leg and hand work with little opportunity to study their wells and improve their operations by experience.

Centralized Kobe operation places all the well controls and service requiring machinery at one easily accessible location for any desired group of wells. At this one point the pumper can do all the manual work that formerly he would have had to walk miles to do. With Kobe pumping he also has simple and new ways of determining at any time he desires, bottom hole conditions which in the past could have been obtained only with special instruments.

Kobe pumping gives the pumper a real chance to do a better pumping job—to study his wells, and apply his experiences. Get in contact with a Kobe representative today. He will gladly show you how this modern method of pumping can help your organization produce more oil more efficiently.

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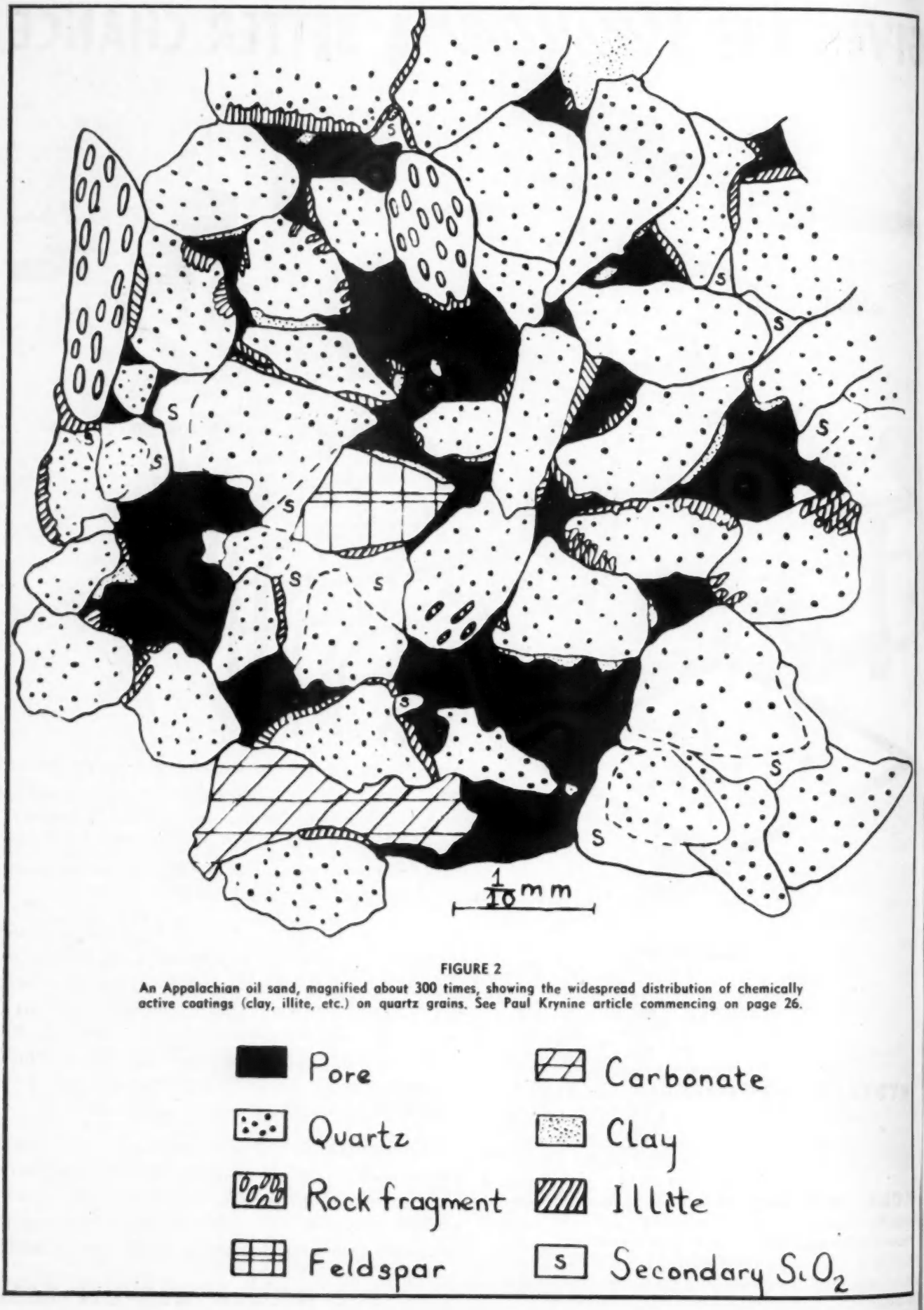

FIGURE 2

An Appalachian oil sand, magnified about 300 times, showing the widespread distribution of chemically active coatings (clay, illite, etc.) on quartz grains. See Paul Krynine article commencing on page 26.

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WHETHER your well is in Texas, Oklahoma or California, you can be sure your job will be a "masterpiece in oil" and a credit to America's Petroleum Industry when you select Lane-Wells to do the gun perforating. Lane-Wells pioneered a new technique of well control with the development of the Gun Perforator.

For example, *Selective completion* made possible production at great depths, in thin sands, through cemented casing, under conditions unheard of only a few years ago; *Plug-back operations* made available reserves of heretofore unrecoverable oil; positive *control of gas/oil ratio* permitted each well to produce more oil more efficiently.

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three percent of the areas underlain by sedimentary rocks.

The problem is to localize the oil within these areas. This requires thinking, and hence oil finding should begin in our heads.

Limits of Concept

At present oil finding is based upon the concept that, since oil is lighter than water, oil tends to gravitate to the highest spot within a subterranean closed oil reservoir or "trap." There are practically no exceptions to this rule, but nevertheless the concept is limited in its application as an oil finding tool because, first, many traps are not obvious "structures," and second, because apparently anticlines are not capable of concentrating oil in adequate amounts without a preceding stage of preliminary concentration through what Levorsen calls "up dip wedge belts of porosity."

Besides anticlines, however, there are other types of oil fields in which oil accumulation is not controlled by long range migration induced by a late, post depositional structural deformation of the earth's crust.

These are oil fields which are colloquially known among geologists as "stratigraphic traps," somewhat of a misnomer. These are really *petrologic* oil fields in which the occurrence of oil is related to primary sedimentary processes and we know exactly nothing about how to find them excepting by drilling wells at random and hoping for the best. Since the vast majority of the oil fields of Pennsylvania belong to this petrologic or "stratigraphic trap" type, the industrial importance for the Commonwealth of a speedy solution of the problem of locating this type of oil accumulation becomes immediately apparent.

A considerable number of American (and foreign) oil fields outside of Pennsylvania also belong to this petrologic trap type. Furthermore a large number of oil fields are of a combined petrologic-late structural type, with the controlling factor being the petrologic (stratigraphic) one.

Discovery of Fundamental Laws

In order to discover these petrologic oil fields we can invent some kind of geophysical or geochemical gadget or doodlebug which would point directly (and correctly) to the oil field underneath. This is a possibility, but rather a remote one. Or we can discover the fundamental laws of oil acumulation and, after working out the pattern of distribution of these petrologic oil fields, set up a series of criteria for their discovery.

This requires a thorough understanding of the principles of sedimentology.

Research in this direction has been carried on by the Department of Earth Sciences and the Mineral Industries Experiment Station of The Pennsylvania State College since the middle of the year 1942.

Any kind of geologic prospecting, be it for oil or for metals, is roughly equivalent to the picking of a needle from a haystack. Hence to be successful *quickly* in such a quest, it is necessary to apply methods of detection based upon basic differences in properties between the needle and the hay—or between the barren rock and the petroliferous or metal-bearing rock.

In certain cases the properties involved are simple and obvious, in other cases (as with stratigraphic oil traps) these properties are neither obvious nor simple and require considerable basic research of a fundamental type for their understanding, research which must be directed not only toward the deposit itself (the needle) but also, and to a considerable degree, toward the study of the enclosing rock (the haystack).

The differentiation of oil bearing stratigraphic traps from ordinary barren sediments is controlled by the application of basic principles of sedimentation, the difference between these two types of sediments being only in the degree of application of certain sedimentological factors which produce *relative* quantitative changes of some of the properties which otherwise, in a general way, are common to both.

Sedimentary Rocks

As explained in previous papers (P. D. Krynine "Sediments and the Search for Oil," Mineral Industries, Vol. 13, No. 3, December, 1943, and P. D. Krynine "Diastrophism and the Evolution of the Sedimentary Rocks," syllabus-outline of a lecture given before several of the affiliated societies of the American Association of Petroleum Geologists and printed by the Distinguished Lecture Committee of the AAPG, Tulsa, April, 1943) sedimentary rocks are a mixture of chemical and detrital end members and they originate along a triple line of diastrophic descent which forms three main series of sedimentary rocks: the quartzite-limestone series, the graywacke series, and the arkose series.

Further research since that time has shown that although oil fields can occur within each one of these major rock series, nevertheless, within each series, oil is generally connected not with the predominant normal rock type but with certain, rather infrequently found, and abnormal types which have been termed *sedimentary end phase concentrates.*

A tabulation of results of the petrographic study of oil fields shows that there exists a definite straight line relationship between these sedimentary concentrates and the occurrence of many, if not most, oil fields. A schematic presentation of the estimated volumetric distribution of the three principal petrographic series of sedimentary rocks and of their petroliferous concentrates is given in Figure 1. This sketch shows that the actual distribution of *oil bearing zones* within each major rock series is not directly related either to the total volume of such a rock series, or even to the amount of potential reservoir type strata present within the series. It is however related to the dominant type of the diastrophic and sedimentary processes which built each major rock series. The sketch also shows that within each major rock series the accumulation of oil is controlled in a specific (and changeable!) fashion either by structural, petrologic (stratigraphic) or geochemical factors. There are no less than 20 such petrologic subdivisions of oil fields. Hence in order to be effective, methods of prospecting, and to a large extent also methods of production, must change from one major rock series to another.

These results indicate that there is a direct connection between large scale accumulation of oil and certain rather abnormal sedimentary processes which result in the formation of sedimentary concentrates. These processes leave on the rock many imprints besides producing oil. Hence these imprints can be used as oil finding criteria. If known, these criteria can be used to prospect for oil fields in the same way as we are now prospecting for metalliferous ore deposits by assaying and following the established gradient toward the region of its maximum development.

Such an "assaying" can be carried either on a petrographic basis, through a detailed study of drill cores, or by geophysical methods, once the necessary criteria are given by the geologist to the geophysicist to be picked up.

In order to carry on such petrologic prospecting, an exhaustive understanding of the fundamental principles of sedimentation is necessary.

Analysis shows that sedimentary rocks possess not less than 93 basic inorganic properties or parameters, in addition to other organic properties which have not been finally tabulated. Of these 93 parameters, 25 are expressed at the level of the individual grains (like color), 33 at the level of the rock aggregate (like porosity), and 35 at the level of the entire rock formation (like bedding).

Each one of these properties fluctuates quantitatively within a very wide range. Studies carried so far seem to indicate that in the sedimentary concentrates which form oil fields, certain parameters (a small fraction of the 93 mentioned above), fluctuate within a rather narrow quantitative range. The method of prospecting would be, hence, to pick up these diagnostic criteria within their diagnostic range and to drive straight toward the maximum locus of their development along a line of increasing gradients.

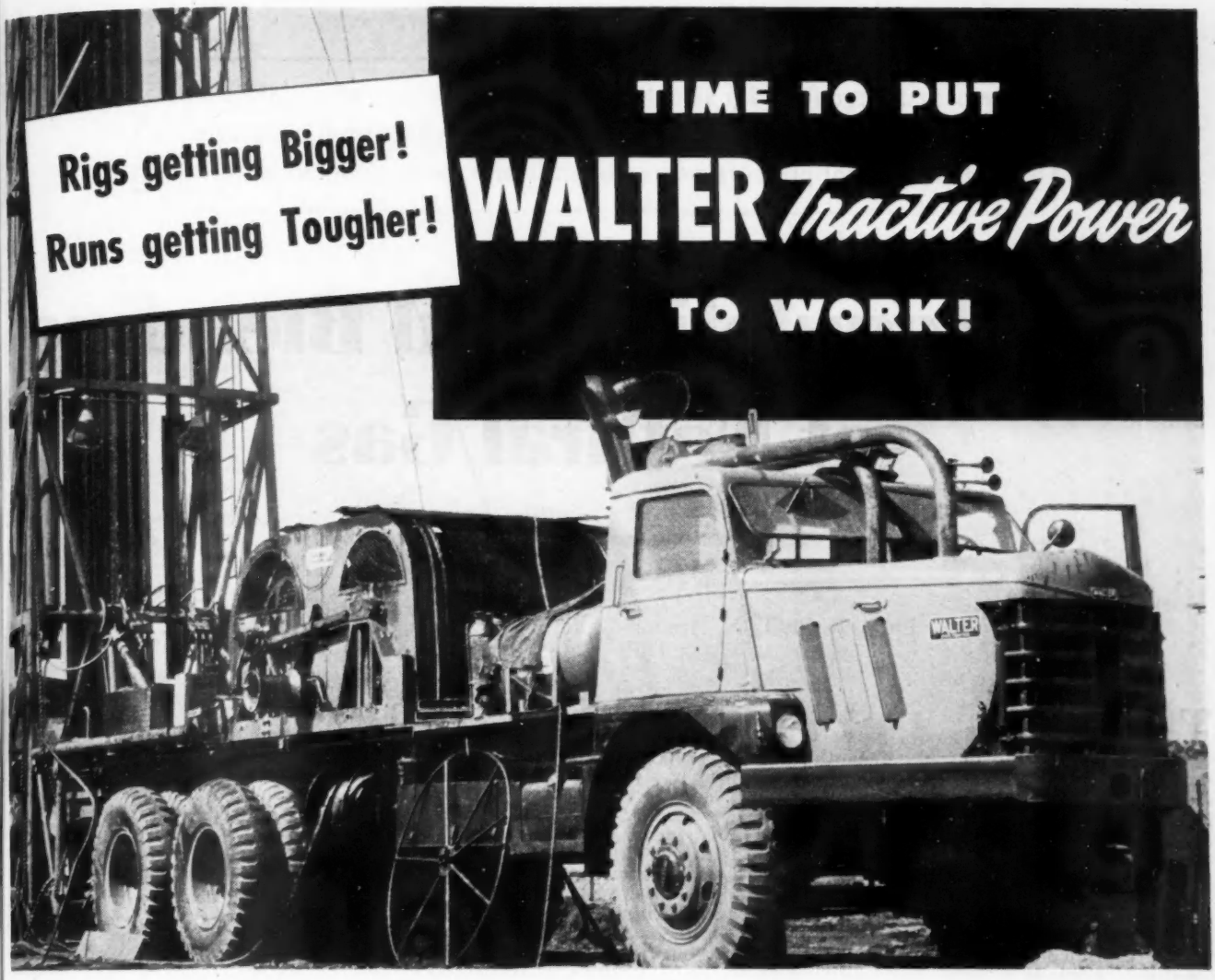
Much Study Required

Although this is easy in theory, it can be done in practice only after an exhaustive study of sediments in general, and oil field petrology in particular, along lines similar to the research carried by the Carnegie Geophysical* Laboratory for igneous rocks. However, since conventional structural methods of prospecting fail in the cases of many petrologic reservoirs, such a fundamental line of attack seems to be the best possibility to keep our future oil reserves at an adequate level.

Finally, the possibility of using petrographic methods of control during the production stages, both flush and secondary, should not be overlooked. Porosity, permeability, yield, retention, the behavior of electric logs and many other factors are all controlled to an unsuspectedly large degree by the texture and *composition* of the reservoir rock. This reservoir rock is far from being an inert framework of "silica particles," but on the contrary, frequently reacts most vigorously with fluids both connate and *especially introduced.* Many technological problems of this type can best be solved through a petrographic study of the sand and thus sedimentology can become instrumental in helping to find new oil within the existing oil fields. (Figure 2.)

These are some of the possibilities which lie before the petroleum industry through a study of sedimentary rocks and of the processes responsible for their formation.

* "Geophysical" in this sense refers to the properties of solid matter in the interior of the earth's crust (igneous rocks) and bears *no* relation to the term "geophysics" as understood in petroleum geology.



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Utmost care required for selection of proper regulator which plays most important role in distributing systems. Capacity chart used to determine valve size. Equal pressure percentage blending unit principle described

The Regulation and Blending of Natural Gas

By H. A. BROWN, Hanlon-Waters, Inc., Tulsa, Oklahoma

THE natural gas business has three fundamental characteristics: the drilling for and producing of gas, the transportation of gas and its distribution in city plant systems. Efficiency and economy in these three characteristics are measured in great part by accuracy in measurement and smoothness and regularity in the delivery. Regulation is the major factor which aids in accurate measurement and assures delivery of the product in the quantities and under the conditions required.

Regulation and measurement are based fundamentally on temperature and pressure. The purpose of the gas regulator is to reduce a higher pressure to a lower and to maintain either the high or the reduced pressure constant without a great degree of variation. Therefore, utmost care should be given the proper selection of the regulator for the problem at hand.

The principle upon which all regulators are constructed are substantially the same. Of course, there are modifications of construction, each of which has its individual merits.

Regulator's Task

When a regulator is installed to maintain a constant discharge pressure, the gas appears to flow from the regulator without variation of pressure. There is, in fact, a tendency at all times for the pressure of the discharged gas to rise above or fall below the fixed limit, due to changes of the inlet pressure or rate of flow. If the inlet pressure were constant and the rate of consumption uniform, the regulator would find no application in the gas industry. But these conditions are never constant, and consequently the regulator is designed to utilize slight variations to automatically maintain the outlet pressure within narrow limits.

Before going further into the subject, it might be well to have a short resume of just what a gas regulator is. A regulator is a valve, through which the flow is automatically controlled. The means of controlling the flow is usually by movement of a diaphragm connected to the inner valve of the regulator. In all types of regulators this diaphragm is held in an extreme travel position by some means of preloading. The amount of preloading and the size of the diaphragm are so related that the diaphragm will move the inner valve to the opposite extreme of travel shortly after the pressure on the diaphragm passes the desired working pressure. The point of pressure control is varied by upsetting the equilibrium between the preload and the pressure on the diaphragm by changing the amount of preload. The word "diaphragm," as used in this discussion, may be a piston, bellows, or the conventional diaphragm. Preloading may be spring compression, fluid pressure, or dead weight. Weight loaded regulators will control more sensitively within their pressure limitations than a spring loaded regulator.

The weight load presents a scale balance, and the unbalancing of this scale upsets the equilibrium and moves the inner valve of the regulator through a greater change of position than can be had with a spring loaded valve. Then, where the diaphragm of a regulator can be made of sufficient size and balanced with a heavy weight, more sensitive control can be obtained than with a spring loaded valve.

Increasing Sensitivity

The elimination of the stuffing box on weight loaded valves inherently increases the sensitivity of the valve as the friction lag is decreased by the amount of the necessary friction of the stuffing box to hold the pressure under the working conditions. For this reason on low pressure regulators, the recommended construction is with the diaphragm in direct communication with the valve body, eliminating the yoke and stuffing box.

Pressure loaded regulators are superior to other types in sensitivity of control, between inches of water and 2[illegible] pounds pressure. Within this range greater diaphragm travel, with the resulting inner valve travel, may be obtained with less change of controlled pressure than in any other type valve. With a constant loading pressure on a larger balanced diaphragm, the available force for utilization of valve travel with an incremental change of controlled pressure, is greater than in a spring loaded valve due to spring characteristics, and in a weight loaded valve because of frictional force losses.

Spring loading is ideal for motor valves controlled by a device with a pressure output range of 0-15 or 0-[illegible] pounds. Springs compress in a direct proportion to the load applied, with a constant load increase being required for each increment of compression. Then a definite diaphragm pressure will represent a definite valve travel, with a fixed amount of diaphragm pressure change required for a fixed amount of valve travel change. As each compression increment is a valve travel increment, the valve travel is always in proportion to the relationship of the controlled pressure to the preloading. This type of loading gives less tendency for overtravel and less possibility of "hunting" than the other types of loading.

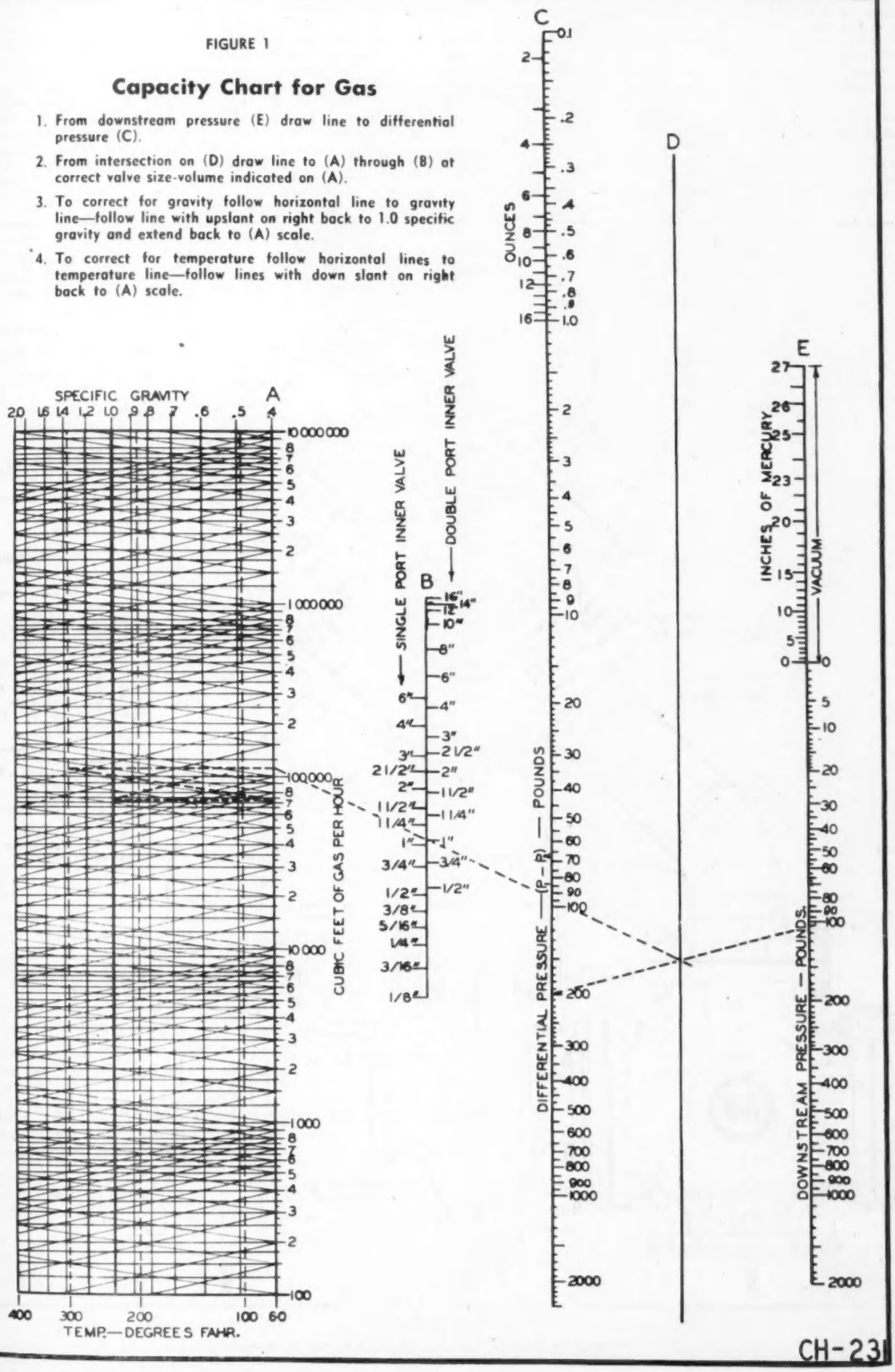
Pilot Control

The increased complexities of modern domestic and industrial demands require closer control in transmission and delivery pressures than can be accomplished in many cases with the direct loaded regulator. Especially is this true under widely changing loads. For such application, the pilot control operating a motor valve is the best method. The principle which makes the pilot control valve more accurate than the direct loaded types for higher controlled pressure, is that the pilot acts as a sensitizer magnifying the control valve travel for a given change of controlled pressure. For this reason, a more accurately size[illegible]

FIGURE 1

Capacity Chart for Gas

1. From downstream pressure (E) draw line to differential pressure (C).
2. From intersection on (D) draw line to (A) through (B) at correct valve size-volume indicated on (A).
3. To correct for gravity follow horizontal line to gravity line—follow line with upslant on right back to 1.0 specific gravity and extend back to (A) scale.
4. To correct for temperature follow horizontal lines to temperature line—follow lines with down slant on right back to (A) scale.



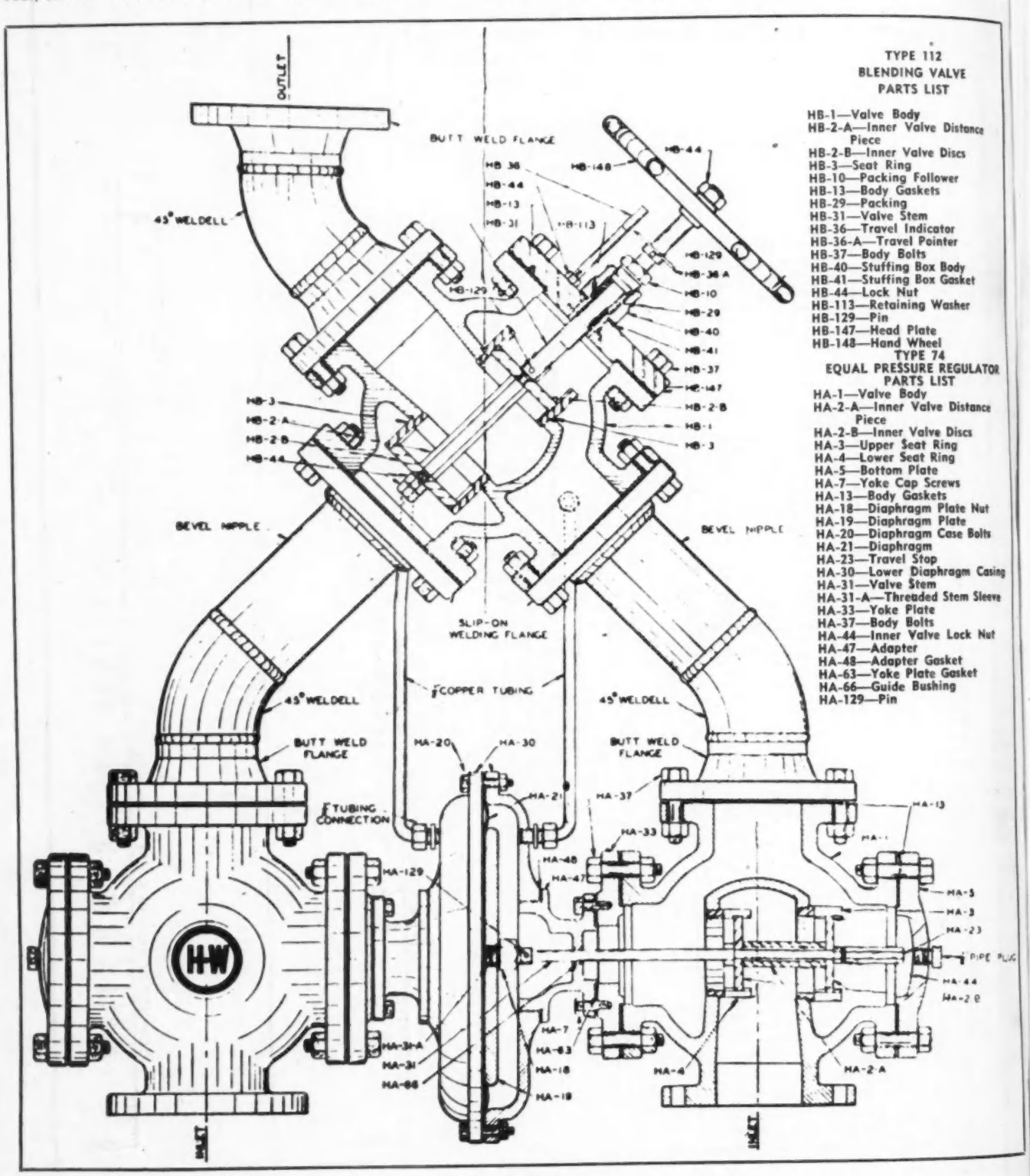
control valve can be used. The smaller motor valve will tend to give better dead-end shutoff and a closer control of the flow through the valve since the full range of valve travel may be utilized.

There is still quite a tendency to give too little regard to the proper sizing of a motor valve. Since it is not a regulator in itself, as it is often erroneously called, but depends on a pilot or instrument for its dictates, it is all the more important to have the correct size inner valve for the conditions at hand. Regardless of cost, correctness in construction and efficiency in operation that may be incorporated in a pilot or instrument, unless the motor valve is properly selected and sized for the control job in question, the same neglect might as well have been applied to that instrument insofar as concerns the control results. It has been truthfully, and many times woefully, said, "An instrument is no better than its diaphragm motor valve."

Charts Useful

Manufacturers of automatic control equipment have prepared a set of capacity charts which may be used to determine the correct size valve to handle the required flow through that valve. These charts, Figure 1, have proven quite accurate and can be used with confidence. (See page 33.)

To size a valve properly for gas service, the upstream and downstream pressure should be known, from which the differential pressure can be determined. In addition the volume, temperature, and gravity of the gas must be known. The first step should be to correct for gravity and temperature to find the



TYPE 112 BLENDING VALVE PARTS LIST

HB-1—Valve Body
HB-2-A—Inner Valve Distance Piece
HB-2-B—Inner Valve Discs
HB-3—Seat Ring
HB-10—Packing Follower
HB-13—Body Gaskets
HB-29—Packing
HB-31—Valve Stem
HB-36—Travel Indicator
HB-36-A—Travel Pointer
HB-37—Body Bolts
HB-40—Stuffing Box Body
HB-41—Stuffing Box Gasket
HB-44—Lock Nut
HB-113—Retaining Washer
HB-129—Pin
HB-147—Head Plate
HB-148—Hand Wheel

TYPE 74 EQUAL PRESSURE REGULATOR PARTS LIST

HA-1—Valve Body
HA-2-A—Inner Valve Distance Piece
HA-2-B—Inner Valve Discs
HA-3—Upper Seat Ring
HA-4—Lower Seat Ring
HA-5—Bottom Plate
HA-7—Yoke Cap Screws
HA-13—Body Gaskets
HA-18—Diaphragm Plate Nut
HA-19—Diaphragm Plate
HA-20—Diaphragm Case Bolts
HA-21—Diaphragm
HA-23—Travel Stop
HA-30—Lower Diaphragm Casing
HA-31—Valve Stem
HA-31-A—Threaded Stem Sleeve
HA-33—Yoke Plate
HA-37—Body Bolts
HA-44—Inner Valve Lock Nut
HA-47—Adapter
HA-48—Adapter Gasket
HA-63—Yoke Plate Gasket
HA-66—Guide Bushing
HA-129—Pin

FIGURE 2
Two reducing regulators opposed, actuated by one diaphragm

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Patterson-Ballagh Pipe Wipers are standard equipment on the majority of drilling rigs and producing leases. They reduce operating time because: (1) During freezing weather, ice does not form on pipe, preventing slips from holding; (2) No dilution of mud by wash water, reducing danger of blow-out; (3) Holes sealed against dropping tools during withdrawal or running of drill pipe; (4) Fire hazard reduced. Oil is stripped from drill pipe and tubing, eliminating UNSAFE floor; (5) As drill pipe is wiped dry, small leaks or "washed out" joints can often be detected; (6) No loss of time when out of hole, as no need to circulate mud back into condition.

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corrected volume. To correct for gravity, locate the required volume on "A" scale, with a straight edge follow the horizontal line to the gravity line, then follow line upslant on right, back to 1.0 specific gravity. Then extend a line horizontally back to "A" scale. To correct for temperature, follow horizontal lines to temperature line. Then follow lines with downslant on right, back to "A" scale. This gives the correct volume. Now, from the down stream pressure, "E" scale, draw a line to differential pressure on "C" scale. From intersection on "D" scale, draw a line to the corrected volume on "A" scale, through "B" indicating the correct size valve.

These capacity charts are for sizing direct actuated regulators as well as motor valves. However, due to the travel limitation on this type regulator, to obtain full valve capacity on this maximum travel the flow requirements on regulators from ½ inch to 1 inch should be multiplied by three before sizing. On regulators from 1¼ inches to 2 inches the flow requirements should be multiplied by four. On 3, 4 and 6-inch regulators the flow requirements should be multiplied by eight, and on 8 and 10-inch regulators the flow requirements should be multiplied by ten.

When the pressure drop on regulators controlling air, gas, or steam exceeds 50 percent of the inlet pressure, determine the regulator size on the proper capacity chart, using a differential pressure of 50 percent of the inlet pressure.

Sizing of Valves

In sizing the butterfly type valves, for a rapid method frequently used, a valve is selected one size below that indicated on the capacity chart

There are numerous applications requiring a valve to pass liquid and gas. To properly size a valve for these conditions, arrive at a size for the liquid—then a size for the gas. Take the square root of the sum of the squares of both liquid and gas.

To find the capacity of a given size single port valve, use 60 percent of the capacity shown for a double port valve. To obtain the correct size for a single port valve, divide the volume by .6 or multiply by 2 to be on the safe side.

Blending

The basic objective in blending of gas is to obtain a predetermined desirable British thermal unit value gas. This gas may be for proper furnace combustion, economical and safe distribution for domestic consumption, or for internal combustion power units. To obtain this predetermined desirable gas, it may be necessary to dilute or inject a higher British thermal unit value gas or vapor to produce the necessary mixture.

A simple and practical method of blending, which has been used with some degree of accuracy, can be referred to here as an equal pressure percentage blending unit principle. This method can be applied when there are two or more gas streams at unequal pressures with different British thermal unit valves, each stream being constant within itself as to British thermal unit content and the requirement being to mix two or more for a predetermined percentage blend.

The first step involved is to reduce two streams of unequal pressure to an exactly equal pressure, through the use of an equal pressure regulator handling both gas streams simultaneously. A mechanism suitable for this work is made up essentially of two double ported balanced motor valve body assemblies connected with one shaft or stem common to both, inner valves actuated by a single diaphragm housing unit built around and directly connected to the shaft midway between the two regulator bodies. When there is movement of the shaft, both inner valves and the diaphragm move in the same direction and travel the same amount. Each inner valve structure is reverse acting with respect to its side of the diaphragm. In other words, when the diaphragm moves away from an inner valve, its ports are closed while inner valve on the opposite side opens its ports a like amount. Please refer to Figure 2, which in reality shows two reducing regulators opposed, actuated by one diaphragm.

This arrangement eliminates the necessity of packing—always a detrimental source of friction. The downstream side of the two reducing regulators is connected or piped to the two inlets of the blending or mixing unit. Just ahead of the two inlet ports of the mixer, pressure taps are made to transmit the actual downstream pressure at this point to either side of the diaphragm. Half-inch diameter tubing generally is used. Should one of the downstream pressures exceed that of the other, a differential in pressure across the diaphragm occurs, which in turn moves the inner assembly in the proper direction to bring downstream pressure back into balance. This system responds quickly; is very sensitive to pressure variations and assures delivery of two streams, always equal in pressure, at the entrance of the two inlet ports of the blending valve. The blending valve is a three-way valve, two inlets and one outlet, operated on the theory that a constant given pressure ahead of a given size orifice will continue to deliver a constant flow. If the orifice size is varied and the pressure held constant, the rate of flow will vary in direct proportion.

Varying the Orifice

As indicated in Figure 2, the blending valve has two ports or orifices of equal area. Two valve discs on a spacer and shaft are so arranged and connected to a handwheel that, when one port or orifice is closed, the other is wide open. Therefore, the size of the orifice may be varied to obtain the desired blend. The handwheel shaft is threaded ten threads per inch and the position of the inner valve discs can be determined by an indicating vernier scale calibrated in tenths of an inch. One full turn of the handwheel causes the discs to move one tenth of an inch, ten turns giving one inch movement. Should the inner valve discs be in the midway position, or 50 percent of valve travel, each port is 50 percent open, which will give a 50-50 blend. If the bottom port is 25 percent open, the top port will be 75 percent open, giving a 25-75 percent blend. When the percentage blend has been calculated, the same percentage is set up direct on the vernier scale with a respect to inner valve position.

Should a third source of gas supply be necessary to secure the proper blend, a second blending unit would be installed on the downstream side of the first unit for the third injection or blend.

Conservation Makes Texas War Contribution Possible

Texas has accounted for nearly 90 percent of the additional crude oil production necessary for the prosecution of the war, and can look for a more severe cutback than other sections in activity after the war. This was the view expressed by Dr. Richard J. Gonzalez, Humble Oil & Refining Company economist, speaking before the Houston Geological Society last week.

Gonzales anticipated a daily average allowable after the war of 1,500,000 to 1,600,000 barrels, or 25 percent less than the present figure of 2,150,000 barrels daily from the state's 102,000 wells, saying that many of the producers are now called upon for from two to six times the amount they were making before the war. He pointed out that Texas alone was able to make the huge efforts necessary to support the drastic increase in production, and that such an achievement would not have been possible but for the sound conservation policies followed by Texas for the past 10 years.

"It can only be hoped the industry will deal with these problems of declining activity as soundly and effectively as it handled others in order to establish its remarkable record for supplying the additional oil required for war," he said.

The overall cut of 25 percent will take place upon the culmination of the war with both Germany and Japan, according to Gonzalez. If Germany is defeated first he anticipates a reduction of approximately half that amount before the end of the war in the Pacific.

Humble Lists Changes

Humble Oil & Refining Company, Houston, announces the following changes in supervisory forces of the production department:

Roy J. Downey, division chief clerk, was transferred from the West Texas division, Midland, Texas, to the Louisiana division, New Orleans, Louisiana.

Leo Gallagher, assistant division chief clerk of the Southwest Texas division, Corpus Christi, Texas, was transferred to the West Texas division, Midland, Texas, as division chief clerk.

C. E. Capers was transferred from the Louisiana division, New Orleans, Louisiana, to the Gulf Coast division as district chief clerk.

B. P. Guyton, district chief clerk of the Hobbs district, Hobbs, New Mexico, was transferred to the West Texas division, Midland, Texas, as assistant division chief clerk.

A. J. Bedford, assistant division chief clerk, was transferred from the West Texas division, Midland, Texas, to the Southwest Texas division, Corpus Christi, Texas.

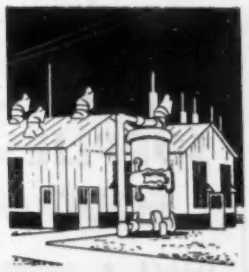
G. R. Van Landingham, district chief clerk, was transferred from the Wasson district, Denver City, Texas, to the Hobbs district, Hobbs, New Mexico.

M. L. Weatherall was promoted to district chief clerk, Wasson district, Denver City, Texas.

O. Lee Furse, district petroleum engineer, was transferred from the London district, Overton, Texas, to the Hobbs district, Hobbs, New Mexico.

Clarence N. Hunt, district petroleum engineer, was transferred from the Hobbs district, Hobbs, New Mexico, to the London district, Overton, Texas.

OPERATING HINTS *For Pipeliners*



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Strainer Pit Crane Lightens Lifting Job

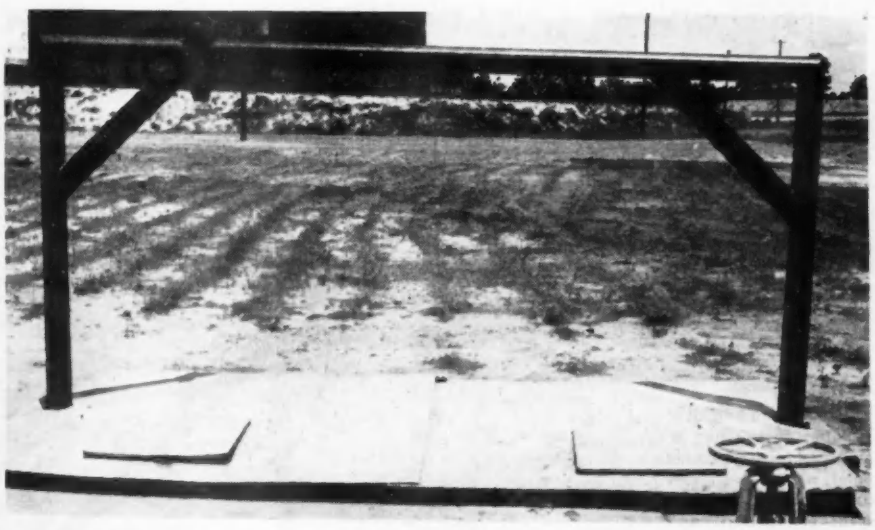
Where pipeline strainers are set below ground, handling of the heavy flanged heads and bulky strainer baskets poses a serious problem, especially in these days of curtailed crews and decreased man power. One line equips its strainer pits with a support, of 3-inch extra-heavy pipe, fiirmly set in concrete bases and braced to give required strength at the center of the span.

STRAINER CLEANING

Mounted on horizontal member of the support in a wide-flanged pulley with short U-shaped yoke over the pin and enclosing the pipe. This serves as attachment for the general purpose chain hoist, brought out from the station when strainer changes are indicated.

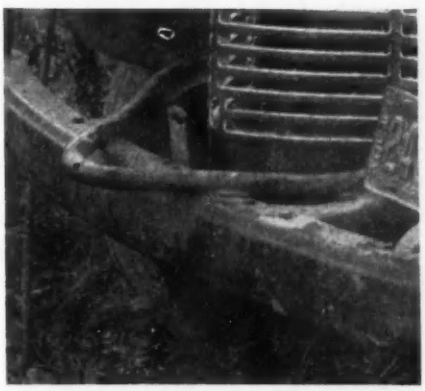
By dividing the steel pit cover in the center, one half may be left in place when changing strainers, and the second portion slid across it. The doubled steel plate then serves as working surface onto which the strainer and cap may be lifted during the change or cleaning operation.

Small plates covering manholes in the larger cover units give access to the control valve wheels in the pit, and eliminate need for shifting the heavier units except when unobstructed access to half the pit area is required.



Heavy pipe stand, set in concrete and spanning entire pit, carries trolley for attaching chain hoist to lift heavy units and transfer them to unused portion of strainer pit steel covers.

Sturdy Tow Bar Aids Pipe-Stringing Truck



Heavy loop of bar steel, welded to frame ends and bumper, provides hitch for hook or line bight.

Pipeline trucks, especially those used for stringing pipe in advance of laying spreads, frequently are called on to negotiate slopes and terrain where truck power and traction are insufficient to overcome mud, grades or other obstacles. For such transportation, the truck either must depend upon its winch line, or must be towed by tractors.

LINE PIPE STRINGING

To provide adequate hitch for the tow line, one stringing contractor equips his trucks with a tow bar, made of 1-inch round steel, formed to a yoke which lies atop the bolted-on bumper and open ends of which extend back along the top flanges of the two frame channels. The bar is welded to both channels, and also to the bumper at the areas of contact.

The loop projecting beyond the bar is ample for a chain hitch, or will take the hook of a winch line or snatch block, while the weldments at the bumper bar insure centering of the pull even though the line lie at a sharp angle with truck progress.

The method of attaching the bar to the truck transmits the pull directly to the frame members, without stressing the bumper brackets.

Drain Trap Conserves Rain Make-Up Water

Make-up water for the cooling systems of engines operating in areas where surface water contains corrosive or scale-forming ingredients may be supplied through a small treating system or, if the rainfall be sufficient and well-spaced over the year, may be caught from the station roof.

WATER SUPPLY

One such latter-type installation, in an area where the rainfall is heavy and dust conditions

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Kansas City, Missouri

Drain and downspout collect water in drum for transfer to radiator while vent curbs mosquitoes.

rarely occur, requires only a short length of gutter on the corrugated eave to trap sufficient water to maintain a supply. The water is run into a 55-gallon steel drum, from which the head has been removed, and which has had a thorough coating of paint in the interior to prevent rusting. A close-fitting head is made and placed over the treated drum, the downspout being carried through a hole without outside clearance. This type of cover requires that the air within the drum be displaced up the downspout as water runs in, but at the same time it prevents entry of mosquitoes.

The base of the drum may be connected to the water-circulating system of the engine, in which case make-up water is drawn into the radiator simply by adjusting the valves, or a hand pump may be used to draw water into a container.

Ingenious Valve Drive Speeds Truck Loading

Control of the flow through a truck-loading riser is obtained in an unusual and ingenious manner at one loading rack where manpower shortage made it necessary for the truck driver also to manipulate valves controlling flow into his tanks.

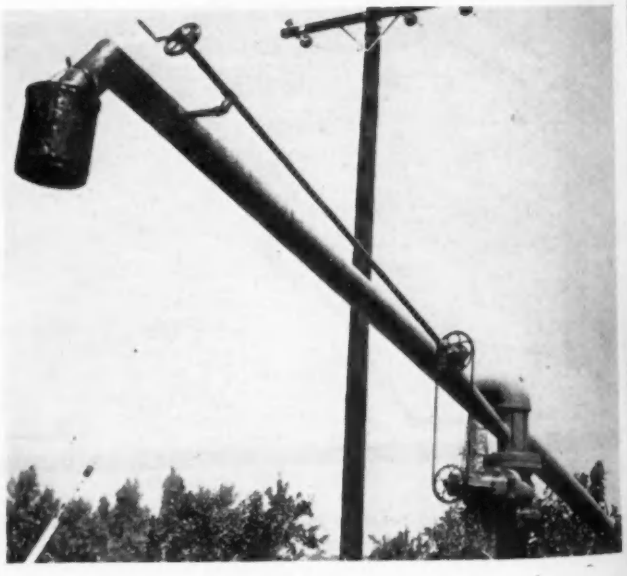
TANK TRUCK DELIVERIES

The riser was built so as to carry the delivery spout on a swing, the pipe serving as spout being pivoted on the swing at or near its center so as to provide built-in counterbalance and lessen the task of spotting the spout over the tank dome. The control valve wheel was removed and in its place was fixed a salvaged bicycle sprocket. A second similar sprocket was mounted at the level of the swing, and the two connected by a bicycle chain.

A light shaft, mounted alongside the delivery spout, was tied to the upper sprocket shaft through a universal joint, its outer end equipped with crank and valve wheel to allow tightening the valve and then spinning it through the free arc of travel. To give most advantageous operation of the wheel, the shaft was mounted so that the control mechanism would stand well above the end of the spout when delivering into a tank dome.

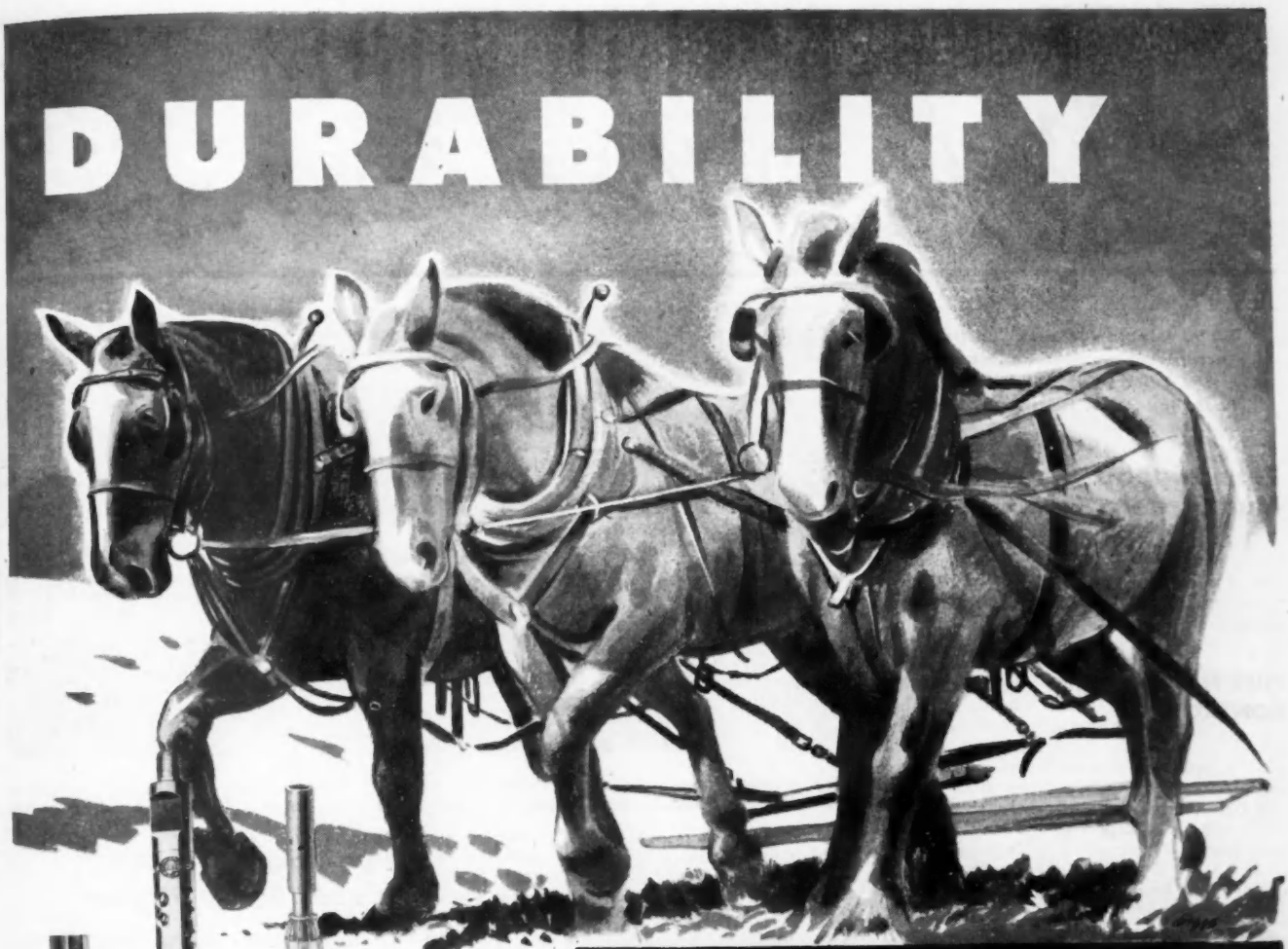
A boss or hook, welded to the beak of the delivery spout, serves to retain a drip catcher and prevent loss of fluid on the ground where it would create fire hazard, and also tend to deteriorate truck tires driven through oil-soaked ground.

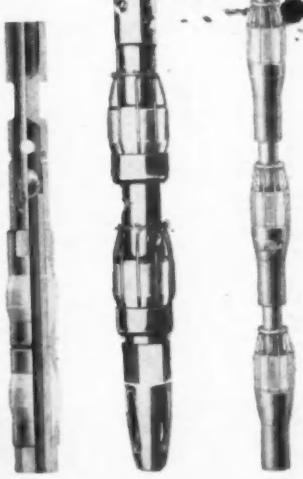
The balancing end of the swing may be shortened if weight be added in the form of rider or counterpoise, and may be blanked by welded disk at swing if desired.



This truck loading riser is balanced to swing or revolve around midpoint, while hand wheel and paired bicycle sprockets permit distant control of flow through main valve below swing.

DURABILITY





TYPE "H" TYPE "K" TYPE "A"

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Very compact 2 cup unit on single mandrel Maximum fluid by-pass area Exceptionally fast falling.

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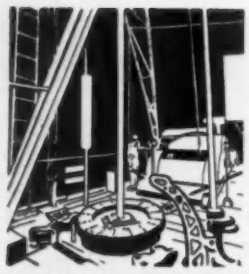
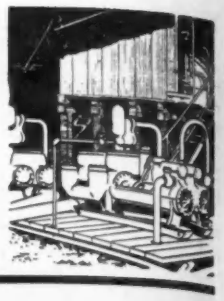


OPERATING HINTS *For Drilling Crews*



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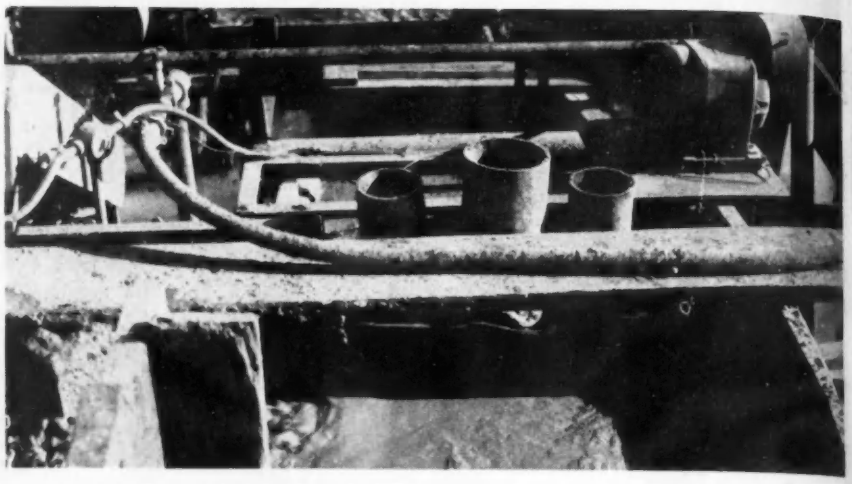
Pipe Nipples Control Mud Screen Distribution

Controlling and smoothing out the mud return flow before it passes over the shale shaker is one of the ever-present jobs which the drilling crew usually works on during the odd times when they are not on the derrick floor. One crew devised a time saving method of accomplishing this task, using several pipe nipples of varying sizes which are stood on end to divert the flow. Local conditions will determine the exact positions of the nipples—as well as the number and size of nipples to use—but in the typical example illustrated, three proved to be ample. One 6-inch piece and two flanking 4-inch lengths were placed athwart the principal part of the flow where it tended to "pile up" due to the right angle turn just preceding the shaker.

MUD FLOW CONTROL

This method is superior in many ways to the practice of installing permanent baffles across the sluiceway. The pipe nipples may be placed and after studying the flow for a few minutes, the workman can re-adjust them to suit any possible condition or characteristic of flow. The nipples are heavy enough to remain stationary despite minor vibrations and their concave surfaces tend to gently divert the flow without roiling the fluid. Due to their ease of adjustment, they may be moved quickly to meet any changed condition such as a thicker or greatly increased volume of returning mud.



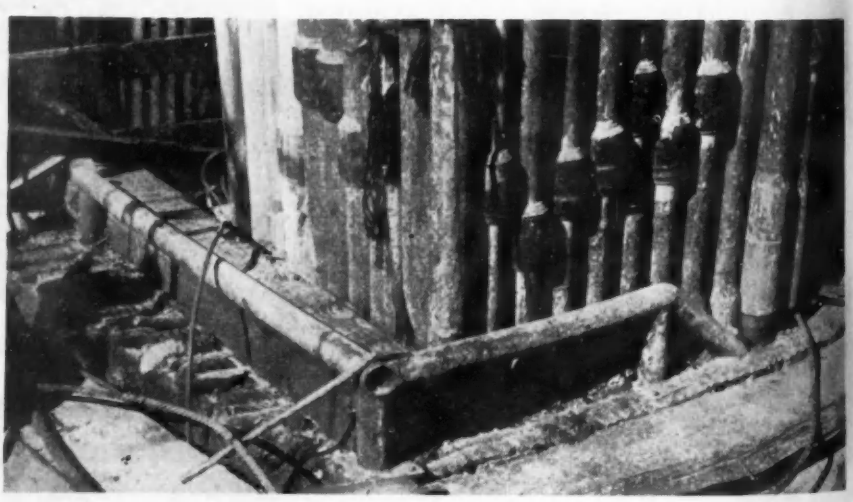
Use of short pipe sections, set vertically into mud flow, permits regulation of distribution across screen, changes being made by spacing nipples or varying diameter of adjacent units.

Pipe-Rack Stop Rail Speeds Stand Placing

On deep wells where unusually long strings of slim-hole drill pipe are being used, it is necessary to be unusually cautious in the manner in which the drill pipe is stacked up in the derrick to assure that there will be no skidding of individual stands with consequent serious damage or loss of life.

DRILL STEM RACKING

One company employs a light pipe railing some eight inches high, forming a small rack extending around two open sides of the base to prevent slipping or kicking out of the joints. The 2-inch pipe guard is provided with broad flat bases



Instead of the conventional rail made from one pipe section bolted to the floor, this elevated rail offers more stopping area and takes drag of placing on collar instead of threaded section.

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WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

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which can readily be spiked to the derrick floor, making them easily removed when necessary but assuring ample lateral strength. To the inside of the front railing is placed a heavy timber to provide added cushion and strength to that part of the rack.

To lend additional non-skid properties to the base area, discarded manila line is doubled back and forth along the floor and nailed in place. Not only is skidding eliminated, but threads and joint seating surfaces are also protected from injury.

Stirrer-Equipped Drum Aids Mud Conditioning

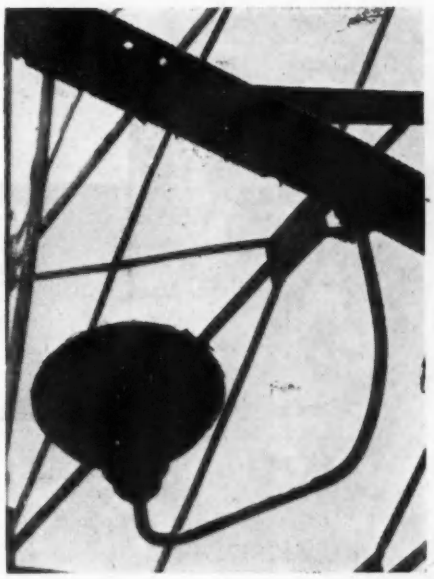
Assuring more evenly-mixed chemicals prior to their being admitted to the mud stream, the small mixing barrel used by one drilling contractor is both efficient and negligible in cost. A common 55-gallon drum with its top cut out and provided with a paddle wheel arrangement inside, is set up on planks laid athwart the mud ditch near the point where the latter empties into the suction tanks. A short length of sucker rod with two paddles welded to its lower end was mounted in an upright position inside the barrel, the ends being held in position by passing them through holes cut in cross-bars welded across both top and bottom. A short crank welded to the exposed end gives ample leverage for turning the paddles.

CHEMICAL ADDITIONS

Dry chemicals in particular are handled much easier and more efficiently through use of this system. Mixing the dry material with several buckets of water and then stirring vigorously with the paddles will assure a consistently smooth and concentrated solution which may be metered into the mud stream. A small quick-opening spigot in the bottom of the drum permits directing the flow into the center of the stream.

Paddles, welded to shaft carrying crank above drum, enable thorough mixing before flow to mud stream.

Inverted Light Fixture Illuminates Upper Rig

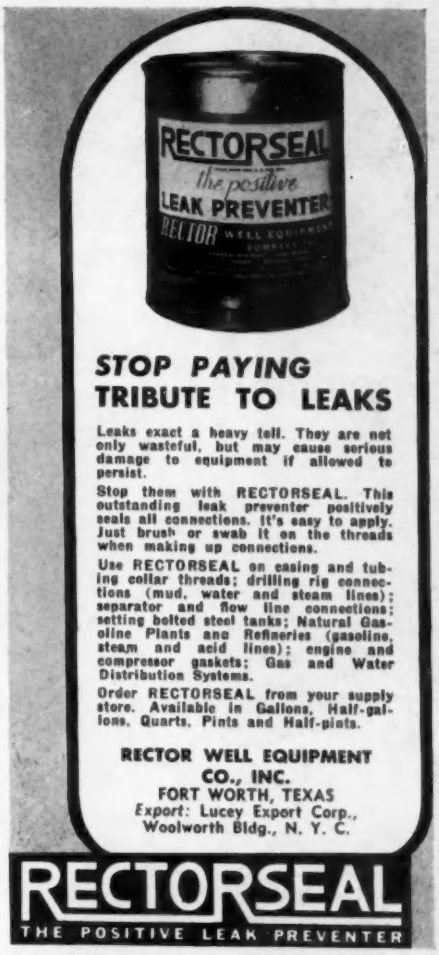


Gooseneck conduit carries lighting fixture to throw beam upward into derrick along block's path.

One of the difficulties which faces the driller on his night tour is the job of running in or coming out of the hole with a long string of pipe. He must look almost straight up in the derrick against a glare of floodlights, trying to follow closely the course of the travelling block and maintain a close watch on the derrickman's signals. One driller eases this strain by installing in the first girt, directly above the drawworks, a large reflecting light fixture containing a very strong bulb, but which has the reflecting bowl turned upward.

DERRICK LIGHTING

Bent into a U-shape, the conduit supports the fixture in the upturned position some two feet out from the girt toward the inside of the rig. The in-



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BE SURE TO CHECK . . . .

TRADING POST SECTION

ON PAGE 67 OF THIS ISSUE

Because of the scarcity of certain types of new equipment and the fact that some operators may have a surplus of some items and a serious shortage of others, this **Used Equipment Forum** is performing a valuable service to operators in locating needed used materials or disposing of surpluses that may be needed by others.

CHAINS

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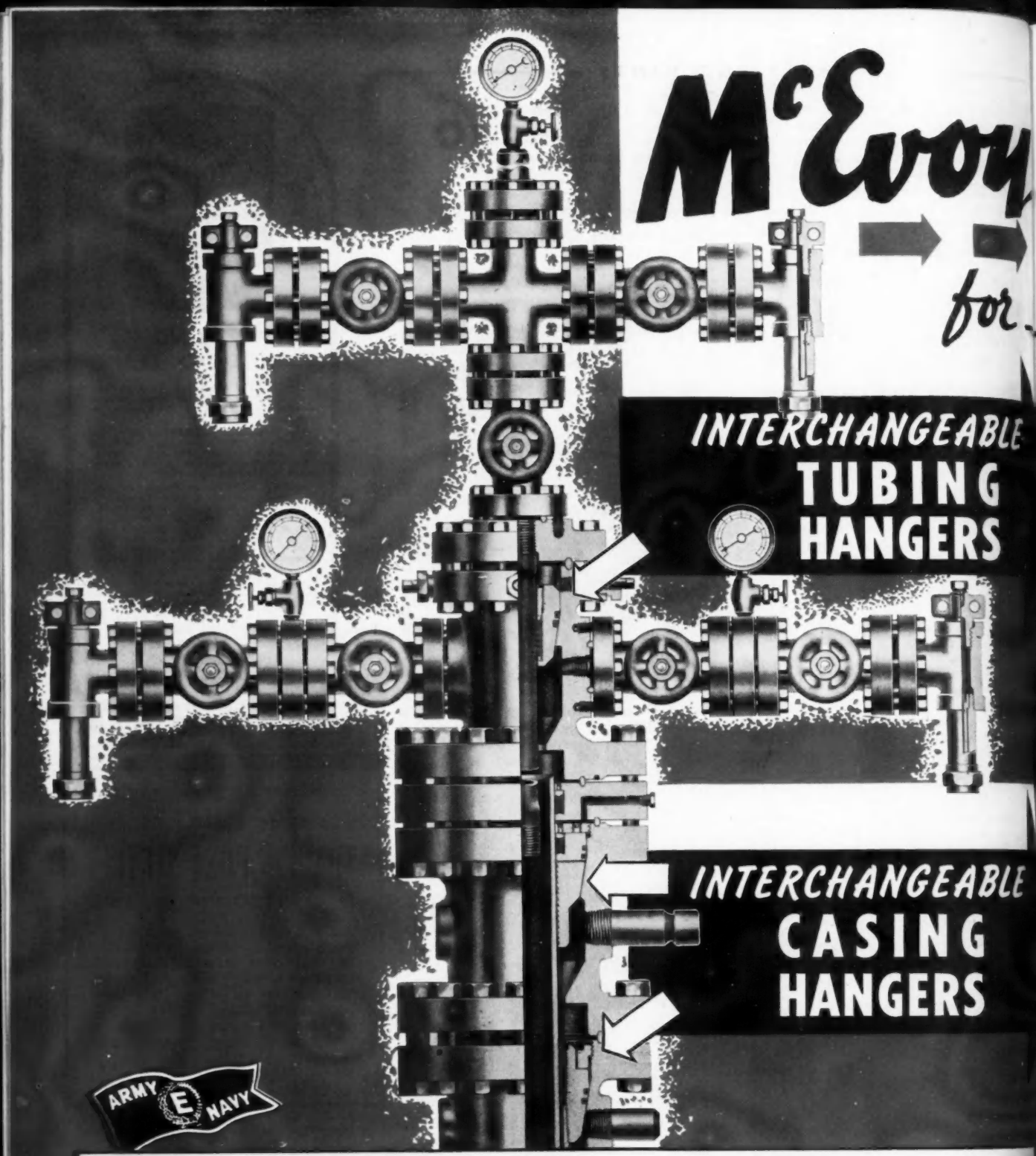

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Every piece of McEvoy equipment is individually inspected to meet the close tolerances and specifications set forth by McEvoy engineers. This inspection includes Rockwell and Brinnell tests for proper tensile strength; gaging for proper sizes; chemical tests for proper metal compositions and Durometer tests for correct rubber hardness. These inspections guarantee McEvoy equipment to be correct as specified.

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Each McEvoy well head assembly is subjected to thorough pressure tests before the assembly is shipped. These pressure tests correspond in all instances to A. P. I. specifications and are conducted under the procedure as set forth by the Association of Well Head Manufacturers.

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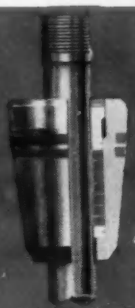
EVERY DEPTH . . EVERY PRESSURE RANGE . . EVERY TYPE OF COMPLETION

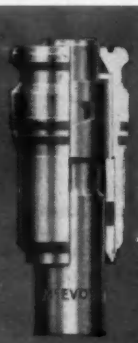
ALB

Threaded mandrel hanger for use where completion methods do not require a specialized hanger.



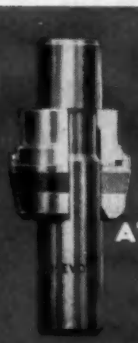
AFB

Developed especially for dual completions or where production packers are set. Permits well to be washed in under full pressure control without necessity of blow out preventers or back pressure valves. Polished joint allows movement of tubing under pressure.



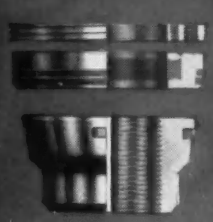
ATSJ

For screen and liner packer settings. Permits tubing to be raised one joint for final suspension after washing screen and setting packer.



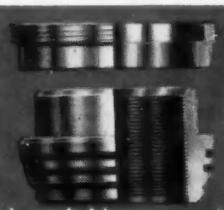
ATSC

Permits running and landing of tubing through assembled christmas tree. This hanger is designed to permit any method of well completion.



LHCS-1

Affords a non-welded seal for utmost safety. Slips may be locked together and landed through preventers if desired. This hanger is highly desirable where N-80 pipe is being set, due to difficulty of obtaining a satisfactory weld on this class of pipe.



LHCH

Threaded mandrel hanger permits landing of casing through preventers and is satisfactory where close spacing of pipe is not necessary.

LSE

The Type LSE Flange may be used above any McEvoy Casing Hanger as an auxiliary seal. This flange permits field testing of both upper and lower seals and means are also provided so that both seals may be repacked under pressure.

LHCLWS

The LHCLWS Casing Hanger utilizes slips for suspension and welded seal. Slips are assembled inside housing and complete assembly may be landed through blow out preventers.

McEVOY CASING and TUBING HANGERS PERMIT ANY TYPE OF COMPLETION

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Take from ¼" to ⅝" Chain
For details see page 810 Composite Catalog
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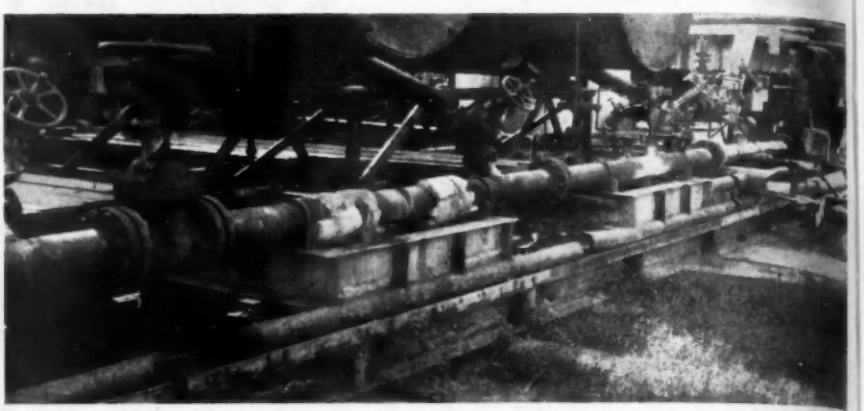
stallation is a simple one to make and represents but an hour or so work, but it greatly improves the efficiency of the driller and therefore, indirectly, that of the entire crew.

Channel Iron Frame Speeds Boiler Setting



This channel steel sub-base offers uniform surface for spotting individual boiler bases without requiring laborious jacking of entire load of unit to insure proper alignment of connections.

Furthering the effort to completely unitize the majority of their heavy drilling equipment, one company has devised a means of supporting boilers on individual bases, yet permitting each unit to be lined up perfectly with the others so that unitized piping connections will never fail to match. To the bottom of the front section of each of the individual base mounts was welded a length of salvaged pipe. These pipe bases lie end to end along an upturned channel iron support, the latter causing the boiler mounts to line up perfectly. A skid-base-mounted assembly of water softener and other control units likewise is rested on one end of this channel iron base, thus making it a simple matter when assembling at a new location to align all fittings in a minimum of time without welding or pipe-fitting work.

UNITIZED BOILERS

Since only the base is aligned the weight handled is light.

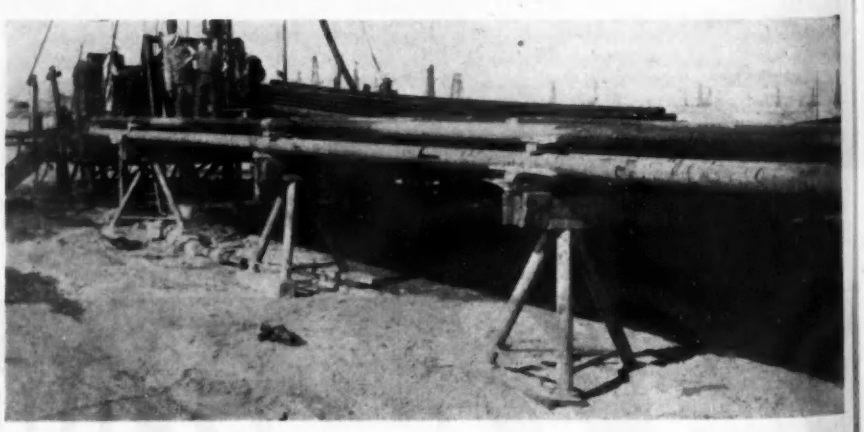
Also unitized on this boiler set-up is the main steam line leading over to the rig machinery. Instead of extending the individual boiler lines out to a common manifolded line laid on the ground beyond the boiler mounts, this unit has a self-contained main line secured to and extending across the front of the individual bases. Flange connections and flange-equipped valves permit quick, easy assembly and disassembly of these connections for moving.

Streamlined Pipe Racks Save on Material Need

Streamlining pipe racks to the same degree of portability as the modern slim-hole drilling rig may be accomplished cheaply by using small all-welded tripod bases. Three short lengths of small-sized drill pipe are welded together to make a sturdy tripod, the base of each leg being supplied with a flat steel shoe to give greater stability on soft ground. On top of the mount is welded a short length of channel iron having the open side facing upward. In this channel rests the horizontal supporting members of the rack. These members consist, not of single, difficultly-obtained 6x6's or 6x8's, but three 2x6's set side by side in the vertical position.

DRILL PIPE STORAGE

This utilization of lighter lumber gives nearly the equivalent strength of a single heavy timber, while the lighter material is more readily obtainable and presents a simpler problem in assembling, disassembling and moving the materials at each location.



Tripods, composed of short pipe sections welded to shape, carry flanged heads in which timber cross members may be bedded, and afford maximum protection against overturning for material used.

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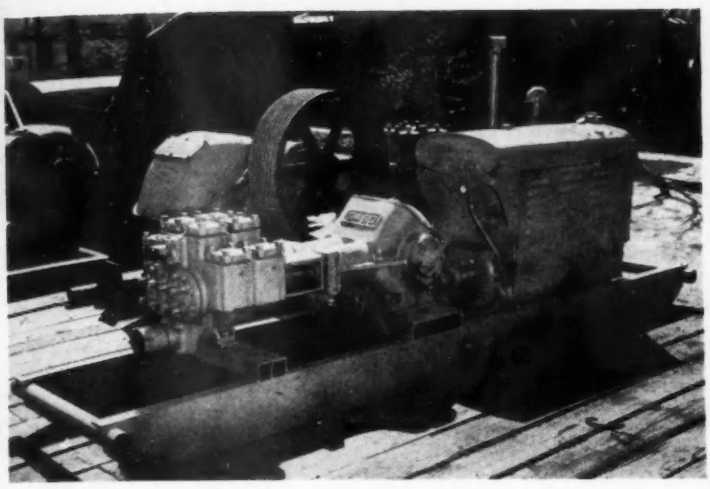

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U. S. Completions Continue to Decline But at a Lower Rate Than in November

Continuing the decline which was marked in November, but at a somewhat lower rate, completions for the United States in December, 1944, dropped 374 below the November total, but the December period was for 4 weeks or 28 days, as compared with 5 weeks or 35 days for November. On a weekly average basis, December showed the higher average; however the percent of decline in the grand total of wells completed for December, against November, was 16 plus.

The weekly average trend is also stressed by the fact that out of the 40 states or districts showing completions in the United States, only eight showed minuses, or decreases, in the month. The weekly average of 498 wells in December, indicates the general trend of activity over the past year when compared with 528 in October, 1944, 539 in September, 1944, and 440 in November, 1943.

At the end of December, 4180 wells were drilling or rigging up. The total for the last of November stood at 4197. The difference in the tempo of drilling as 1944 closed, compared with 1943, is shown by the fact that 932 more wells were in operation on December 31, 1944, than for the same date in 1943. On December 31, last year, the total for wells in operation and rigging up was 4180. At the end of 1943, this total was 3148.

As was pointed out last month, however, the rate of completing wells now is considerably below that of 1941, due of course to the numerous handicaps faced by the industry in the way of material shortages and lack of labor to keep rigs running most effectively, or to put new ones into operation. Also of serious consequences is the shortage of transportation equipment, especially trucks.

The total of 24,451 completions for 1944, exceeds slightly the prediction made last month that according to the trend indicated then, the yearly total would be 24,400 wells. The 24,451 completions for last year, when compared with the 19,245 total for 1943, emphasize the gigantic effort within the industry to meet the constantly increasing demand for crude oil throughout last year.

December activity, when broken down into the various parts, indicates how much drilling is necessary under present conditions and rates of discovery to keep the discovery record as good as it is. Out of the 1993 wells completed last month, 554 were outright failures. Oil and or distillate production in commercial quantities was reported from 1088 wells; gas producers totaled 193. Old wells deepened numbered 24, and other wells which include water input, gas injection, and salt water disposal, amounted to 134. Thus slightly more than 50 percent of the activity resulted in oil producers. It is not known how many of these producers were new discoveries, but the percentage is not large. Most of them are from inside, proven locations, and draw their output from reserves already known to exist.

This month's completion rate will probably continue the decline observed

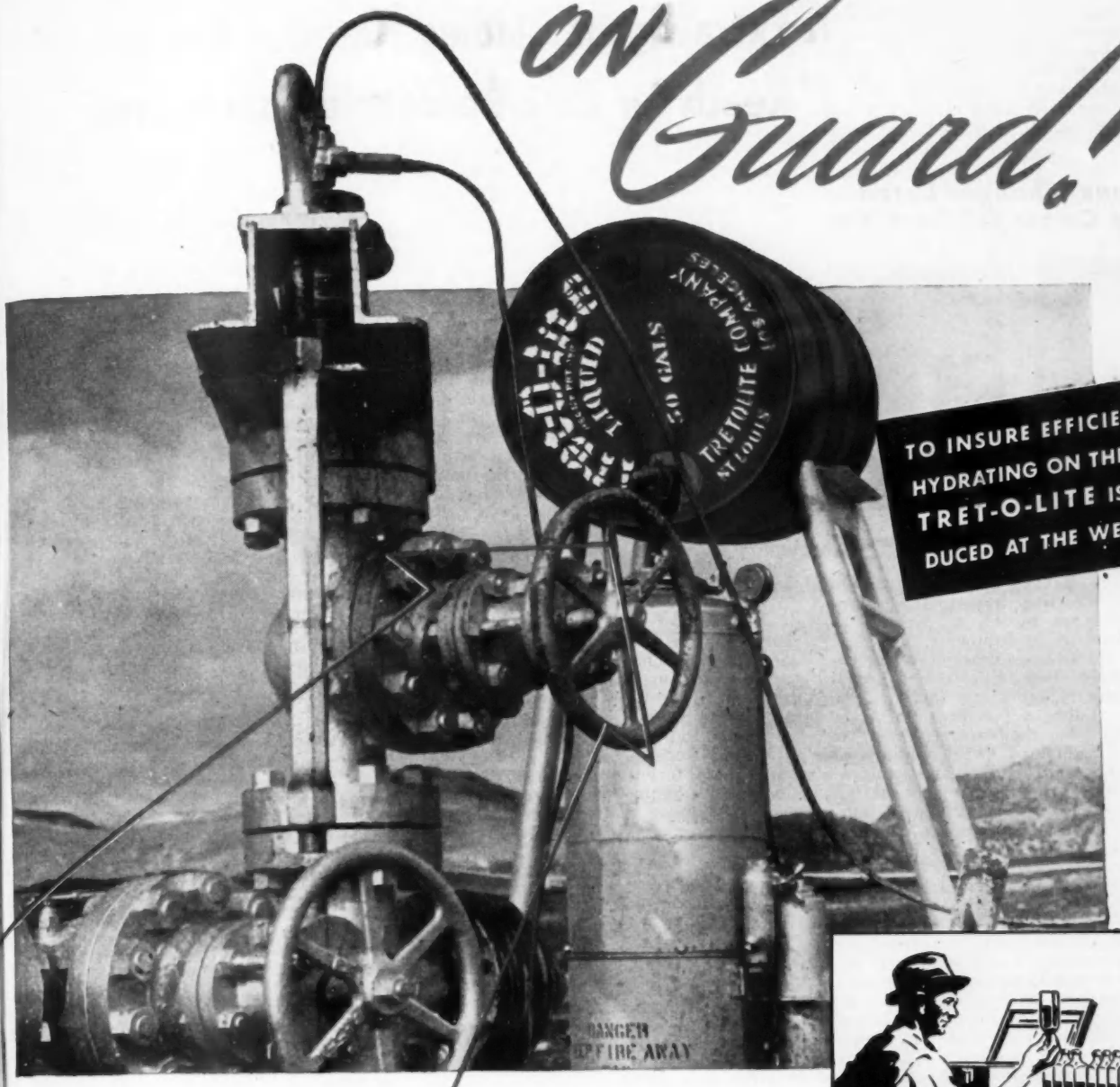
Daily Average Completions 24.7 Percent Higher in 1944 Than in 1943

(Figures compiled from weekly reports of editorial staff men, with following exceptions: Arkansas data from Arkansas Oil and Gas Commission; Illinois from Illinois Geological Survey except for December; Indiana from Indiana Division of Geology; Missouri from Missouri Geological Survey; Allegany, New York, Bradford and Kane-Clarendon, Pennsylvania, from the Producer's Monthly; Tennessee from Tennessee Division of Geology.)

State or District	MONTHLY COMPLETIONS: 1944 — Details for Dec., 1944 — New Wells *Oil	Gas	Dry	Others[6]	Old Wells Deepened	Total Completions — Dec. 1944[1]	Nov. 1944[3]	Dec. 1943[2]	Total Footage Dec., 1944	CUMULATIVE COMPLETIONS: 1944 — Details, Jan.-Dec., 1944 — New Wells *Oil	Gas	Dry	Others[6]	Old Wells Deepened	Total Completions — Jan.-Dec., 1944[4]	Jan.-Dec., 1943[5]	Percent Change in Weekly Average	Total Footage 12 Months 1944	RIGS IN OPERATION — Details for December 31, 1944 — Drilling	Rigs Up	Shut Down	Total: Drilling and R. U. — Dec. 31 1944	Nov. 31 1944	Dec. 31 1943
Alabama	1		2			3			9,105	11		27			38	2	+ 1786.8	188,622	4		1	4	3	4
Arizona												6			6	5	+ 17.7	16,190						3
Arkansas	12	2	9			23	17	21	128,888	137	7	87		2	233	254	— 10.0	1,317,411	26		5	26	32	35
California	137	6	10		1	154	175	128	614,807	1673	37	267		66	2043	1474	+ 36.0	7,298,224	321	36	39	357	356	340
Colorado	2		3			5	1	10	28,535	19	1	10			30	34	— 13.5	150,711	14	1	5	15	14	13
Florida			4			4			20,646			7			7	5	+ 37.5	39,948		3	1	3	3	3
Georgia												8			8	4	+ 96.1	44,028	1		1	1	1	1
Illinois	126	2	72		4	204	204	203	532,294	1,222	8	757	11	70	2,068	1,859	+ 9.1	5,202,651	187	30	12	217	236	178
Indiana	9	1	10			20	24	23	28,617	146	22	154		9	331	288	+ 12.8	597,318	28	8	4	36	39	39
Iowa												2			2	3	— 34.6	3,470	1			1	1	
Kansas	39	14	66	1	4	124	177	150	394,885	857	75	748	26	19	1,725	1,748	— 3.2	5,760,106	261	17	9	278	281	255
Kentucky	33	4	33		1	71	57	39	123,579	394	104	310	4	14	826	427	+ 89.8	1,497,739	73	18	9	91	85	70
Louisiana	30	6	18		1	55	93	61	422,912	427	65	276	4	6	778	667	+ 14.4	5,780,925	181	13	4	194	169	109
North	7	5	7			19	37	33	109,107	107	53	123	1	2	286	319	— 12.0	1,258,862	64	4	3	68	44	39
South	23	1	11		1	36	56	28	313,805	320	12	153	3	4	492	348	+ 38.7	4,522,063	117	9	1	126	125	70
Maryland																			1			1		
Michigan	21	4	28			53	61	59	128,179	265	59	359		5	688	604	+ 11.8	1,686,056	78	38	36	116	154	96
Mississippi	11	2	5			18	31	10	101,246	113	4	95	1		213	97	+ 115.5	1,243,907	52	3	4	55	56	16
Missouri	10	1		10		21	3	2	5,780	24	7	20	10		51	29	+ 72.4	41,455	6		4	6	9	6
Montana	7	2	12			21	27	34	58,938	199	23	104	9		335	242	+ 35.8	863,612	32	6	9	38	37	67
Nebraska			3			3		2	11,840	4		13		1	18	39	— 54.7	56,186	2		3	2	1	5
New Mexico	28		9			37	48	26	122,477	277	15	124		6	422	271	+ 52.8	2,089,175	103	10	21	113	114	91
New York	55			31		86	107	99	115,580	788	2	13	446		1,249	1,241	— 1.3	1,717,358	80	21	21	101	105	96
North Dakota																					1			1
Ohio	26	25	38			89	113	30	227,109	210	423	376	14	1	1,024	737	+ 36.3	2,681,835	167	23	42	190	194	180
Oklahoma	118	4	46	4	3	175	215	124	787,945	1,108	135	564	54	30	1,891	1,466	+ 26.6	7,071,174	518	41	17	559	554	362
Pennsylvania	96	29	2	86		213	273	186	382,683	1,410	306	75	1,268	1	3,060	2,530	+ 18.7	5,460,485	237	30	75	267	280	207
South Dakota																					1			2
Tennessee										2	1	6			9	6	+ 47.8	7,848	2			2		5
Texas	300	37	168	2	10	517	634	457	2,352,494	3,632	251	2,183	25	142	6,233	4,370	+ 39.9	27,721,738	1,282	69	100	1,351	1,314	833
E. Tex. Border		3	1			4	3		22,757	8	12	15			35	18	+ 90.8	217,260	16	4	2	20	28	8
E. Tex. Field													1	3	4	5	— 21.9	4,509						
Rest of E. Tex.	14	2	6			22	24	27	147,344	130	10	136		2	278	255	+ 7.0	1,670,216	51	4	6	55	55	55
North	65		46	2	5	118	129	128	316,937	693	8	651	21	42	1,415	1,108	+ 25.3	4,109,191	163	13	9	176	166	121
West Central	8		16			24	54	40	63,397	162	9	227	2	19	419	394	+ 4.3	997,213	81	7	37	88	70	55
West	113	2	24		5	144	176	99	685,591	1,306	14	271		57	1,648	971	+ 66.5	7,274,519	469	16	21	485	452	330
Panhandle	16	8	9			33	52	22	103,398	236	51	42		3	332	202	+ 61.2	1,040,618	186	10	8	196	190	43
Upper Coast	25	10	17			52	67	35	363,984	320	48	233	1	10	612	337	+ 78.2	4,360,130	111	7	5	118	124	65
Lower Coast	45	10	22			77	74	62	476,433	553	76	295		3	927	641	+ 41.9	5,889,060	140	6	7	146	134	99
Southwest	12	2	21			35	47	35	132,640	193	22	241		2	458	372	+ 20.8	1,807,497	45	2	3	47	70	32
South Central	2		6			8	8	9	40,013	31	1	72		1	105	67	+ 53.8	351,525	20		2	20	25	8
Utah												1			1			4,743			5			3
West Virginia	11	54	13			78	95	87	199,271	89	755	129		2	975	717	+ 33.4	2,516,364	95	14	25	109	114	90
Wyoming	16		3			19	12	15	81,027	147	2	26	1	1	177	126	+ 37.8	787,919	45	2	6	47	45	33
Total U. S.	1,088	193	554	134	24	1,993	2,367	1,766	6,878,837	13,154	2,302	6,747	1,873	375	24,451	19,245	+ 24.7	81,847,198	3,797	383	460	4,180	4,197	3,148

* Includes distillate wells. [1] Wells completed in 4 weeks, or 28 days, ended Dec. 30, 1944. [2] Wells completed in 4 weeks, or 28 days, ended Dec. 25, 1943. [3] Wells completed in 5 weeks, or 35 days, ended Dec. 2, 1944. [4] Wells completed in 53 weeks, or 371 days, ended Dec. 30, 1944. [5] Wells completed in 52 weeks, or 364 days, ended Dec. 25, 1943. [6] Water input, gas injection, and salt water disposal wells.

ON Guard!



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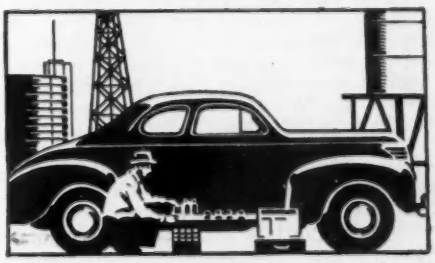

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in December, with perhaps a further gradual leveling off in the curve. This slowing down is a seasonal feature attributed to weather conditions in those parts of the country where severe cold and rain naturally limit activity of all kinds in oil fields, or prospective territory.

Personnel Changes Listed By The Carter Oil Company

W. A. Watkins

Ralph E. Damp

Personnel changes in The Carter Oil Company, effective immediately, have been announced by O. C. Schorp of Tulsa, president, as follows:

W. A. Watkins, superintendent of the southern division, Shreveport, Louisiana, to general superintendent of production at Tulsa, succeeding Ralph E. Damp who goes to Havana, Cuba, as director of Standard Oil Company of Cuba, in charge of drilling and exploration; F. W. Bruner, formerly acting division manager of the northwest division at Billings, Montana, to succeed Watkins as manager of the southern division at Shreveport; R. B. Curran, formerly assistant division manager to become division manager of the northwest division at Billings.

Sequoyah Brown, assistant manager of Carter's personnel and industrial relations department, has resigned to accept appointment as head of a similar department with the newly-organized Interstate Oil Pipe Line Company; John Campbell, formerly assistant supervisor of petroleum transportation, becomes special assistant to M. A. Wright, assistant manager of the production department at Tulsa; Phil Cochran, formerly division geologist of the southern division, becomes assistant superintendent of the southern division, and is succeeded by R. W. Beck.

Other changes elevate H. R. Shannan, Powell, Wyoming, superintendent of the Elk Basin properties, to production superintendent of the northwest division with headquarters at Billings, being succeeded by W. D. Maxwell, Elk Basin production foreman.

Carter announced that appointments of six officials in the Illinois fields have been made permanent as follows: R. J. Sullivan, eastern division superintendent with headquarters at Mattoon, Illinois; O. D. Harper, assistant division superintendent; J. D. Gustafson, division engineer; T. K. Whittington and C. H. Lindsay, superintendents of the Dix and St. Elmo districts, respectively; R. E. Hammond, district engineer at St. Elmo.

☆

A. W. BROCK, pipe line gauger for Sinclair Refining Company in North Texas and an employe since 1917, died January 2 at Olney.

Extravagant Bidding Noted in Current Reach for East Venezuela Concessions

Those who are well acquainted with the situation in booming eastern Venezuela are beginning to express concern over the price tags on some of the concession blocks on which bids have been approved in recent months. In northwestern Monagas, especially, royalty offers on unproved territory promise only slim chances of profitable development, even if production is ultimately obtained.

The scramble for unassigned blocks involves both the companies that have producing properties in the area and newcomers that are getting in on the play. Some of the properties are undoubtedly valuable, since they adjoin proven acreage, but there is little justification for the terms of recent contracts covering most of the blocks in the northwestern Maturin and southern Cedeno districts of Monagas. If and when production is established here it may be necessary for the Venezuelan government voluntarily to revise some of the contracts to assure development that will allow the companies to operate without loss. Otherwise some may be surrendered by default of drilling committments where only mediocre production is promised.

Present high royalty bids are being submitted because of competition between the different companies. All of the bidding companies have had the experience, during 1944, of counting on concession grants for which bids have been invited, only to find that another company has offered more and squeezed them out.

Recent Examples Cited

The most spirited competition for available properties is centered in the Santa Barbara area. Consolidada Petroleum Company (Sinclair) has drilled up practically all of its good acreage in the Santa Barbara field. At the beginning of January the company had 67 producing wells there, with perhaps ten or twelve inside locations remaining to be drilled. Consolidada acreage is bounded on the west by 2 of Mene Grande's (Gulf) Travieso blocks. Mene Grande has been developing its Travieso No. 3 block (19 shut-in wells) and successfully outbid Consolidada in getting its No. 5 block to the south, with an offer to the government of 10,000,000 Bolivares for exploitation rights. This is the equivalent of approximately $3,250,000, or at the rate of $1000 per acre.

Consolidada producing acreage is bounded on the east by Creole-Pantepec holdings, where Creole has been developing the Mulata field as an extension of the Santa Barbara production. At the beginning of 1945 there were 46 completed producing wells in the Creole-Pantepec tract. This tract abuts on the north against the hypotenuse of a small, triangular parcel, on which Consolidada has offset Creole's Mulata production by developing the 30-well Muri field.

To extend the Muri field, Consolidada recently acquired an additional block to the north by bidding 33⅓ percent overriding royalty. Mene Grande holds extensive acreage to the north and west of this latest Consolidada acquisition.

West of Mene Grande's Travieso No. 5 block, the newly organized Phillips Petroleum Company of Venezuela has been granted a large concession by bidding 31 percent overriding royalty.

30 Percent Royalty Bid

Venezuelan Atlantic Refining Company, another recent arrival in Venezuela, acquired in the summer of 1944 half of the Pantepec interest in six concession blocks within 12 miles of proved acreage in the same general area. Since that time it has acquired 2 small parcels to fill in gaps in the Pantepec concession pattern west of Santa Barbara, by going to 30 percent in its royalty bid. The company thus has, at the present time, a continuous concession tract running 15 miles east and west, the east end of which adjoins proved Mene Grande acreage in the Travieso No. 3 block.

Socony-Vacuum Company has also indulged in some of the current inflated royalty bidding, raising the customary ante to 20 percent for a parcel west of its Guico block in the Oficina area.

In view of the very high costs of operating in Venezuela, it is believed that such high royalties are entirely out of line with experience, even though much of the premium acreage proves to be productive. Nowhere else in Venezuela is the determination of subsurface conditions more difficult than in the area east and west of the Santa Barbara producing region. Core drilling and well sample studies furnish the only reliable data for interpretation of structure and the tracing of wedging pays, due to the extremely thick surface mantle of Quaternary sediments that obscure the bedrock section. This rules out surface geological mapping and effective geophysical exploration as primary aids to development.

For the above reasons the bidding contest for properties in northwestern Monagas is apparently inspired mostly on hopes of continued extension of production along the Santa Barbara-Jusepin trend and the possibility of parallel producing trends north and south. It is the general opinion, however, that the high royalty and bonus commitments will discourage extensive wildcat drilling and result in conservative extension testing and offsetting as producing boundaries are moved outward.

Richfield Oil Corporation Vice President Succumbs

Albert M. Kelley, 55, vice president of Richfield Oil Corporation, in charge of the manufacturing, pipe line and marine departments, died January 7, at Pasadena, California, of a hemorrhage of the brain. Kelley, who resided in San Marino, California, is survived by his widow, Lyla Kelley; two daughters, Mrs. Edgar Bridgland and Carol Kelley; and a son, Ensign Clinton Kelley of the United States Navy.

Kelley was one of Richfield's oldest employes in terms of service, having started with the original company in Bakersfield, California, in 1914. He was a member of the District 5 refining committee and the American Petroleum Institute. Kelley was born in Toronto, Kansas, in 1889.

Daily Average Crude Production Drops But Gasoil and Distillates Show Gain

The week ending January 6 was characterized by a decline in daily average production of crude, also a drop in the amount of crude oil run to stills. There followed a corresponding decrease in the amount of gasoline produced. Gains were noted, however, in production of gasoil and distillates, but production of residual fuels was off as compared with the previous week.

Stocks of crude oil gained as did total accumulations of gasoline. At the same time stocks of gasoil and distillate and also of residual fuels declined.

Although the week shows gains of 423,000 barrels in crude stocks, the true picture is reflected in the percentage of change in these accumulations as compared with a year ago, which indicates a decrease of 7.5 percent. The total drop for that period amounts to 17,994,000 barrels.

Production and stocks of gasoline show a more favorable situation as compared with a year ago, with a gain in weekly production amounting to 1,905,000 barrels and total gain in stocks of 9,692,000 barrels.

Production of gasoil and distillate shows a slight gain when compared with figures a year ago. Stock accumulations of this product show a drop of 2,706,000 barrels, due to diversion of these lighter hydrocarbons to production of other products.

Both production of residual fuel and stocks show a gain at this time over last year.

Florida National Park Conditionally Accepted

Conditional acceptance by the Interior Department of a deed to about 1,000,000 acres of land and water in the Florida Everglades, looking toward the creation of a national park, was announced January 2 by Secretary Ickes.

Establishment of such a park has been agitated for years, and in 1934 Congress passed a law authorizing it but the approach of the war and oil explorations in the area prevented consummation of the project. The last Congress passed a law authorizing the department to accept title to land belonging to the State of Florida and to private individuals wishing to donate it, with the condition that mineral rights remain with the former owners for the time being.

If the national park has not been established in ten years' time, title to the property will revert to its original owners.

This procedure, it was explained by Newton B. Drury, director of the national park service, was adopted to provide time for explorations to determine whether oil is present in the area in commercial quantities, while enabling the federal government to extend its protection to the wildlife of the Everglades.

☆

C. F. BARBER, geologist who has been associated with H. C. Spoor, Jr., of Houston, will enter private consulting practice in the Gulf Coast area. He formerly was district geologist for Forest Development Corporation, in San Antonio and prior to this he worked as a geologist for Union Producing Company in Beeville, Texas.

Oklahoma Hearing Set

The Oklahoma Corporation Commission has set January 31 for a hearing on the petition of F. G. and W. J. Fox, independent oil operators of Oklahoma City, for extension of the commission's well-spacing order covering the Layton sand zone of the Crescent-Lovell area, Logan County, to include all or portions of 34 sections. Present commission orders lack uniformity and overlap in several sections of the area. Original order was issued to cover the Layton zone on the east flank of the Crescent pool and a subsequent order covered the flanks of the old Lovell pool. Development has proved the Layton sand to be a common source of supply for both pools.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 3
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	[1]4,762	9–30	[1]4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,644	10– 7
Lows:												
1939	[2]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 8
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–12
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–13	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	[4]220,623	9– 9	76,302	1– 1	30,232	4–29	49,737	3–18

TRENDS OF 1943 AND 1944

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1943:									
January 2	3,871	3,734	233,938	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	3,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 28	4,196	4,227	236,170	12,420	72,525	4,351	37,928	8,732	67,250
September 25	3,344	4,156	233,013	12,206	70,024	4,608	40,328	8,560	66,659
October 30	4,383	4,176	247,219	12,813	69,297	4,642	44,591	7,968	63,833
November 27	4,414	4,261	239,761	12,638	69,980	4,379	46,187	8,633	62,143
December 25	4,363	4,185	241,310	12,597	74,024	4,457	43,791	8,689	57,596
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,085	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,462	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	[1]4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,885	64,382
December 2	4,712	4,693	221,591	14,853	80,426	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	[1]4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
January 6, 1945	4,678	4,656		14,472	86,616	4,533	38,298	9,092	56,074
January 8, 1944	4,364	4,226	[5]240,992	12,567	76,924	4,524	41,004	8,845	54,570
Change:									
In week	—27	—142	+423	—870	+2	+276	—1,197	—64	—1,356
In year	+314	+430	—17,994	+1,905	+9,692	+9	—2,706	+247	+1,504
In year	+7.2%	+10.2%	—7.5%	+15.2%	+12.6%	+0.2%	—6.6%	+2.8%	+2.8%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six-Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, January 1, 1944.

International Developments

Exploration in Palestine Planned by British Firm

Jordan Exploration Co., Ltd., a British concern formed in 1944, has acquired the concession rights previously held by Palestine Mining Syndicate, Ltd., covering 980 square kilometers on the west side of the Dead Sea. Exploration of the concession will be started within a few weeks.

Other concessions are held in Palestine by Petroleum Development, Ltd., subsidiary of Iraq Petroleum Company. Socony interests drilled a wildcat well on the eastern shore of the Dead Sea in 1914, after extensive exploration in Trans Jordan.

Pipe Line Completed in Eastern Venezuela

The 16-inch Mene Grande Oil Corporation-Creole Petroleum Corporation pipe line from the Jusepin-Mulata area to Puerto La Cruz, Venezuela, was completed in December.

Following cleaning and testing late in the month the line was put into limited service the first week of January. Some pumping equipment remains to be installed before the line can be operated at full capacity.

The line provides the first outlet for production in Mene Grande's Travieso block, where 19 wells have been completed. It will allow boosting of production from the Mulata and Jusepin fields, operated by Creole. Deliveries to the line will be stepped up slowly, since many of the wells that will supply the new oil have been shut in for some time, following their completion. They will be worked over and reconditioned in many cases. Production opened in the Atlantic-Pantepec Pirital area may also be handled by this line.

Colombia Production Back at Prewar Level

Official figures show Colombia's commercial petroleum production for the first nine months of 1944 was 16,749,406 barrels from fields in the De Mares and Barco concessions.

The full-year total is estimated at approximately 23,000,000 barrels—nearly equal to the 1939 yield. With shipments from Shell's Casabe field scheduled to begin in a few weeks at the initial rate of 5000 barrels daily; and in view of the continued development of the Tibu fields in the Barco, production for 1945 is expected to be as much as 26,000,000 barrels, which will be an all-time high for Colombia.

Railroad Lines Planned Into Interior Venezuela

Venezuelan and American interests, with encouragement from the government of Venezuela, are proceeding with negotiations for the immediate formation of a company to build and operate the "Gran Ferrocarril de los Llanos" to provide railroad facilities serving the interior part of eastern Venezuela.

Plans call for the construction of 200 miles of line connecting San Fernando de Apure, on the Apure River, with Cagua, a station east of Maracay on the railroad running west from La Guaira and Caracas to Barquisimeto. A second line is also planned, branching off at San Juan del los Morros, south of Cagua, and extending nearly 325 miles southeast to Ciudad Bolivar, on the lower Orinoco.

Two Producers Completed In Barco Concession

Columbian Petroleum Company completed 2 more producing wells in the Socuavo field, Tibu area, of the Barco concession during the week ending December 27. Another well was testing at completion depth of 5420 feet. There are 12 producing wells on the Socuavo structure.

Guarico Wildcat Spudded

Manapire 2, wildcat of S. A. P. Manapire (The Texas Company), in Central Guarico, Venezuela, was ready to start drilling in the last week of December after spudding and cementing surface casing at 1910 feet.

The affiliated S. A. P. Las Mercedes Company was preparing to start operations at its ninth location in the Mercedes field, farther north in Guarico. Mercedes 8 was setting casing at 5751 feet.

Magdalena Test Begun

Richmond Petroleum Company of Colombia spudded its Chorrea Manteca 1, in the La Dorada concession, thus starting the first test in the block, which is about 175 kilometers southwest of the De Mares and Casabe producing area, on the west side of the Magdalena River.

Accountants Elect

Petroleum Accountants Society of Dallas, Texas, announces new officers and committees for 1945, as follows: president, Marion F. Munro, Sun Oil Company; vice president, Wallace W. March, Drilling & Exploration Company; secretary, Paul L. Barr, Hummack Oil Company; treasurer, C. J. Crissman, Trinity Drilling Company; program director, M. O. Dickenson, E. B. Cox & J. L. Harmon; publicity director, V. R. Mondy, Trinity Gas Corporation.

Committee chairmen: membership, R. J. Maddox of G. H. Vaughn; organization, P. C. Frass, Hunt Oil Company; functions, C. W. Denton, Trinity Drilling Company; invitations, W. K. Powell, Two States Drilling Company; public relations, K. M. Milligan, Renwar Oil Corporation.

☆

JACK W. GODDARD, former landman for Sinclair Prairie Oil Company and more recently an operator in West Texas, has been appointed West Texas district landman for British-American Oil Producing Company, with headquarters at Midland.

Export Hearing January 29, TGT Petition February 8

The Federal Power Commission has advanced to January 29 the hearing previously set for February 8 on the application of Reynosa Pipe Line Company, Corpus Christi, Texas, for authority to construct 30 miles of 12¾-inch pipe line from the La Blanca field, Hidalgo County, through the North and South Weslaco fields, to the Rio Grande, and 3000 feet of 8⅝-inch line crossing the river to connect with the transmission line of Gas Industrial de Monterrey, S. A., and to export to that company up to 60,000,000 cubic feet of gas daily.

The hearing scheduled for January 29 on the application of Tennessee Gas and Transmission Company for authority to construct and operate 65 miles of additional pipe line has been postponed until February 8. The applications contemplate the connection with the company's main line from Texas to West Virginia of the Odem field, San Patricio County; Riverside field, Neuces County; Quinto Creek field, Jim Wells County; Tom O'Connor and Refugio fields, Refugio County; Heard field, Bee County; Heyser, Placedo and McFaddin fields, Victoria County, and Menefee and Hungerford fields, Wharton County.

The commission has consolidated the applications of Greenfield Gas Company, Inc., Greenfield, Indiana; Panhandle Eastern Pipe Line Company, Kansas City, Missouri, and Eastern Indiana Gas Company, New Castle, Indiana, for construction of additional facilities in Hancock and Madison Counties, Indiana, and has set them for hearing February 26, Washington. The two gas companies seek connection with the Panhandle line for gas supplies.

Stanolind Line Moves Oil From Hobart Discovery

The Pure Oil Company is trucking crude oil from its Hinton 1, pool opener northeast of the Hobart field, to Roosevelt, Oklahoma, several miles south of the well, where it is being transferred into Stanolind Pipe Line Company's West Texas line. This was found necessary because the regular line out of the Hobart pool which carries sour crude from that field cannot be utilized to move Hinton oil, which is sweet.

PAW Approves 36.8-Mile Pipe Line in Wyoming

Sinclair Refining Company has received approval from PAW to lay 36.8 miles of 8-inch crude oil line from its new discovery at Sand Draw, Wyoming, to its pump station at Crooks Gap, Wyoming. Pipe is to be received about the end of January, when contract will be awarded.

Michigan Line Planned

Leonard Pipe Line Company will build 15 miles of 6-inch pipe line from Deep River and Adams fields in Arenac County, Michigan, to the company's Buckeye station. Contract for construction has been awarded to the Gentry Engineering Company of Jackson, Mich.

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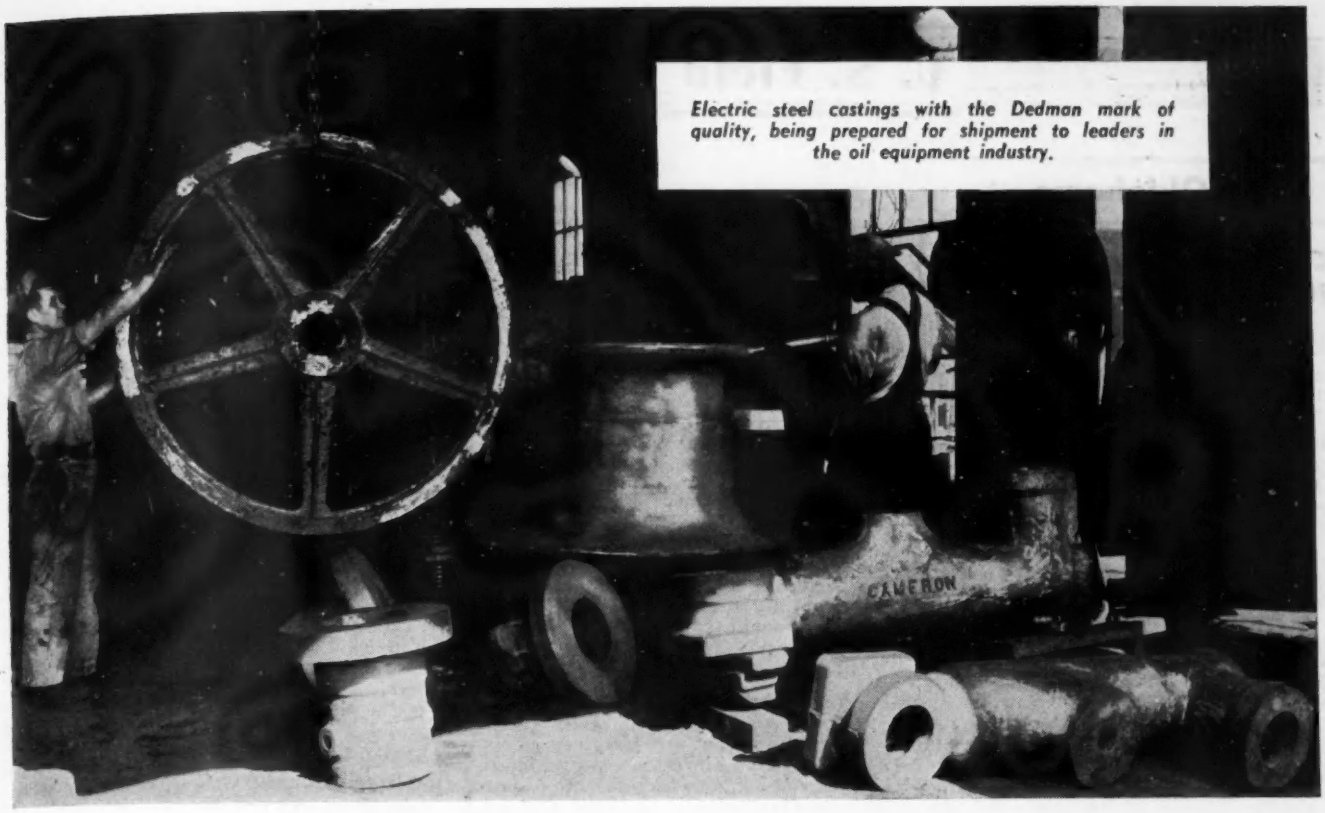
THOMAS W. BACCHUS, retired vice president and director of Hercules Powder Company, Wilmington, Delaware, died December 30. He was 82 years old.



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U. S. Field Operations

Oklahoma

Cleveland County Discovery Heads for Second Wilcox

Cleveland County discovery being carried to second Wilcox; Sohio Petroleum Corporation completes sixth Bartlesville producer in West Edmond; Continental Oil Company completes best well in West Edmond; Okmulgee County test headed for Arbuckle lime; Ohio Oil Company has first producer from Bromide zone in East Pauls Valley area.

Cleveland County: O. G. Harp is carrying Mattheson 1, NE NW NE 19-10n-2w, discovery west of the old Moore pool, to the second Wilcox after production tests from the Bartlesville zone showed a marked production decline. On initial test the wildcat flowed 1315 barrels the first 24 hours from sand at 7568-7607 feet. After 3 days the flow declined to about 5 barrels an hour plus 5,000,000 cubic feet of gas and operator decided to carry on to the deeper Ordovician measure. It was reported that Phillips Petroleum Company was negotiating for the purchase of the well and the 600-acre block and officials declared the strike important. Confidence in the operation was shown by Mid-Continent Petroleum Corporation which staked Antrim 1, NE SE SW 18-10n-2w, northwest offset to the discovery.

Hughes County: Ed J. Kubat set pipe for production test at Boy Scouts 1, SW SE NW 8-5n-8e, wildcat north of the Allen pool. Gilcrease sand was cut at 2440 feet and on drill stem test recovered 95 feet of oil-cut mud. It topped the Wapanuka at 2750 feet and the Cromwell at 2834 feet, where drill stem test between 2834-54 feet showed water. Operator plugged back to 2460 feet for test.

Oklahoma County: Phillips was preparing to test Classen 1, CNW SE 22-12n-4w, wildcat near Bethany. Tanks were being erected as operator prepared to perforate the Wilcox sand at an unrevealed horizon. Tops considered fairly accurate include Hunton at 7131 feet, Haragan at 7150 feet, Chimney Hill at 7210 feet, Sylvan shale at 7270 feet.

West Edmond: Sohio Petroleum Corporation completed the sixth Bartlesville producer in the 4-county pool as the Oklahoma Corporation Commission announced plans to fix production quotas for this field zone. Sohio's Spivey 2, CNE NW was drilled to 7067 feet with pipe set at 6807 feet on top of Bartlesville pay. After testing 2 days the well kicked off at the rate of 100 barrels a day.

Continental Oil Company completed the best well so far in the pool when Johnson 2, CNW NE 9-14n-4w, Oklahoma County sector, flowed 575 barrels of oil in 1½ hours through open 2-inch tubing. After installing tubing head the well flowed 226 barrels of oil in 2 hours from the Bois d'Arc and Chimney Hills sections of the Hunton measure. Its Johnson 1, CNE NE 9-14n-4w, at total depth of 6848 feet, was opened an hour and flowed 230 barrels of oil.

Gulf Oil Corporation's Beck 1, SW SW SW 15-14n-2w, east of the Northeast Edmond pool, swabbed salt water from second Wilcox sand at 6175-6203 feet, total depth, and was plugged back for a Hunton test where some shows were reported.

Okmulgee County: Mid-Continent's Daniels 9, NW NW SE 12-13n-13e, wildcat east of Okmulgee, was below 3304 feet, headed for Arbuckle lime. This test could open a new producing horizon for the entire Okmulgee-Muskogee area.

Bryan County: The Atlantic Refining Company was moving in portable rig at Fee 1, SW SW SW 31-7s-9e, north of Calera, to make big hole in its stratigraphic test drilled early last year. The well developed several good oil shows and Atlantic expanded its lease buying program and later started 2 wildcats. Atlantic's Oklahoma 1, SE SW SW 36-7s-8e, southwest of Calera, was drilling below 6350 feet; its Brown 1, NW NW SE 16-8s-8e, near Colbert, was drilling below 5712 feet after installing heavier rig.

Garvin County: Ohio Oil Company's Brundage 1, NW SE NE 17-3n-2e, flowed 75 barrels of oil daily to become the first producer from the Bromide zone in the East Pauls Valley area. The well tested considerable gas in upper Bromide several months ago through casing perforations which were squeezed off. Casing was reperforated in basal Pennsylvanian.

Kiowa County: Oklahoma's first oil discovery of the year, The Pure Oil Company's Hinton 1, in the CSE NE NW of 10-7n-17w, was officially completed with a state potential of 1659 barrels of oil daily natural through 1-inch tubing choke on 2-inch tubing. Gravity of the oil, which is sweet, is 37.6 degrees, corrected, and the flow registered a volume of 1,500,000 cubic feet of gas. The producer marks an important completion in the Anadarko Basin area which is due for a big play in 1945. Still a geological enigma, the oil is producing from an unidentified sand which some geologists call basal Pennsylvanian. Production in the Hobart field to the southwest is from Hunton and Viola measures and the crude has a fairly high sulphur content. Pure, with a block which covers sections 3, 4, 9 and 10-7n-17w, staked Boxley 1, CSE SE of Section 4, more than ½ mile northwest. The Hinton is doing as well or better than wells in the old Hobart pool.

Logan County: Meanwhile, Oklahoma operators were given formation tops on the important Phillips well about 2½

Wells Completed in the United States in Week Ended January 13, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama	....	....	....	....	*5	....	....	....	1	1	1	....	1	....
Arkansas	5	....	....	....	5	....	....	....	1	1	6	....	6	4
California	33	1	....	....	34	2	....	....	6	6	42	37	79	58
Colorado	2	....	....	....	2	....	....	....	....	....	2	2	2	2
Florida	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Illinois	3	....	....	1	4	....	3	....	4	7	11	49	60	52
Indiana	2	....	....	1	3	....	....	....	3	3	6	4	10	12
Kansas	11	2	....	3	16	2	2	....	8	10	28	27	55	72
Kentucky	2	....	....	2	4	....	....	....	3	3	7	18	25	24
Louisiana	9	....	....	1	10	....	....	....	4	4	14	20	34	18
North Louisiana	3	....	....	....	3	....	....	....	1	1	4	10	14	4
South Louisiana	6	....	....	1	7	....	....	....	3	3	10	10	20	14
Michigan	4	....	....	3	7	....	....	....	3	3	10	32	42	22
Mississippi	....	....	....	....	....	....	....	....	4	4	4	11	15	2
Missouri	1	....	....	....	1	....	....	....	1	1	2	....	2	....
Montana	*2	....	....	1	3	....	....	....	....	....	3	4	7	10
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	2
New Mexico	7	....	....	8	15	....	2	....	3	5	20	9	29	14
New York	15	....	10	....	25	....	....	....	....	....	25	25	50	38
Ohio	2	8	....	2	12	....	....	....	....	....	12	3	15	30
Oklahoma	29	....	1	8	38	2	1	....	8	9	49	39	88	52
Pennsylvania	27	4	15	....	46	....	....	....	....	....	46	47	93	84
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Texas	70	9	1	12	92	1	12	1	24	37	130	97	227	170
E.Tex.Bor. Co.'s	....	1	....	....	*1	....	....	....	1	1	2	....	2	....
Rest of E. Texas	3	....	....	....	3	....	2	....	1	3	6	6	12	10
North Texas	15	....	1	7	23	....	2	....	4	6	29	29	58	36
W. Central Tex.	2	....	....	2	4	....	2	....	....	2	6	2	8	12
West Texas	19	....	....	1	20	....	1	....	6	7	27	31	58	44
Tex. Panhandle	6	7	....	....	13	....	....	....	....	....	13	1	14	6
G. Coast, Upper	2	....	....	....	2	1	3	....	2	5	8	8	16	14
G. Coast, Lower	16	1	....	2	19	....	1	....	6	7	26	10	36	32
Southwest Texas	4	....	....	....	4	....	1	1	2	4	8	10	18	14
S. Central Tex.	3	....	....	....	3	....	....	....	2	2	5	....	5	2
West Virginia	1	11	....	1	13	....	....	....	....	....	13	9	22	36
Wyoming	2	....	....	....	2	....	1	....	....	1	3	3	6	6
Total U. S.	227	35	27	43	332	7	21	1	73	95	434	438	872	710

* Includes distillate wells. † Includes salt water disposal wells.

miles north and west of nearest production in West Edmond. The wildcat, Dublin 1, in the CNE NE of 18-15n-4w, was testing slight shows in the Hunton and Bartlesville zones after failure in the second Wilcox sand. Tops released by Phillips included Oread, 4224 feet; Tonkawa, 4582 feet; Layton, 5397 feet; Bartlesville, 6457 feet, where a slight oil show was logged; Hunton, 6818 feet, where slight stain and odor was reported; Sylvan shale, 7073 feet; Viola, 7169 feet; second Wilcox, 7580 feet. Prospects for production were slim.

Kansas

Sharp Decline in Oil Runs Is Result of Bad Weather

Cold and rainy weather slowed Kansas operations as operators reported only nine completions as commercial wells, resulting in a sharp drop in the state's oil runs. Barton County claimed the spotlight with a new pool discovery and an extension.

Barton County: Southwest of the Hiss pool, Phillips Petroleum Company opened new production with Spani 1, NE NW NE 36-20s-14w, which flowed 30 barrels of oil and 10,000,00 cubic feet of gas in 24 hours from Lansing lime between 3250-63 feet. Operator was attempting to shut off gas for a better test of the oil horizon.

Nadel & Gussman of Tulsa extended the Albert pool to the east at Haas 1, SE SW SW 30-18s-15w, which flowed on initial and was later assigned a pumping potential of 292 barrels of oil and 1,000,000 cubic feet of gas daily from Reagan sand topped at 3535 feet.

Ford County: The Texas Company was preparing to test Thomas 1, SE SE NW 33-27s-23w, rank wildcat in southwestern Kansas. Pipe was set at 6054 feet and Simpson and Arbuckle cut at 5847 and 5917 feet, respectively. Sample shows were reported at 5850-58, 5884-89 and 5904-09 feet. Electrolog showed good kick in the Arbuckle where initial test will be made, with well bottomed at 6152 feet.

Jefferson County: Magnolia Petroleum Company's National Life 1, SE SW NE 15-10s-19e, wildcat 5 miles southwest of the McLouth pool, was shut down at 2020 feet. The well cut Mississippi lime at 1558 feet and Hunton at 1942 feet with no shows.

Phillips County: Six miles east of the Ray pool Skelly Oil Company was preparing to test a good oil show in Lansing lime between 3265-80 feet after finding salt water in the Arbuckle at 3415-3503 feet in Thayer 1, SE SE NE 34-5s-19w.

Barber County: Sinclair Prairie Oil Company was giving the Skinner pool a big well at Oldfather 1, C SE 7-31s-14w. With Arbuckle topped at 4554 feet and the well drilled to 4561 feet hole filled with 4200 feet of 27-gravity crude and operator was preparing to acidize preparatory to taking potential.

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LAWRENCE O. HOLLOWAY, district superintendent in the production department at Talco for Humble Oil and Refining Company, has been transferred to the Pickton district, Winnsboro.

New Mexico

Penrose Area Discovery Offset Shows Gas On Test

Gulf Oil Corporation's Gutman 1, north offset to its Penrose deep area discovery in the 6400-foot Clear Fork, was drilling at 5710 feet after showing 2,500,000 feet of sweet gas when tester was used in Holt zone at 5478-5535 feet. The discovery passed up a prolific gas flow in this upper zone, which eventually will be utilized because of the absence of hydrogen sulphide.

N. G. Penrose, Inc.'s Federal-Penrose 1, C SE NW 9-22s-37e, and near center of the Penrose field, will be drilling before the end of the month on Ellenburger contract.

This operation is being financed by nearly all producers in the field on a basis of acreage held in the area, and each will have a proportionate interest in the well and 80-acre site.

Humble Oil & Refining Company's Keinath-Federal 1, wildcat near the east border of Lea County, was drilling lime and shale at 9905 feet. Ohio Oil Company's Jones 1, 3¼ miles southeast of the Hobbs field, was drilling lime at 6590 feet. The Atlantic Refining Company's Stephens 1, 14½ miles southeast of Cap Rock field, was drilling lime at 7155 feet. George P. Livermore, Inc.'s Williams 1, C NW NE 7-13s-32e, and 2 miles south of the Cap Rock area, was changing to cable tools after landing 5½-inch casing at 2975 feet. This wildcat topped the Yates at 2220 feet with elevation of 4381 feet, establishing favorable structural position, and is seeking production from the 3000-foot Queen, or Red sand.

Reduced Production of Trucks to Be Continued

The War Production Board last week announced that the reduced truck-production program announced last month (THE OIL WEEKLY, January 1) will be maintained throughout 1945, but that production for domestic consumption for the year will be 199,993 units instead of the 186,792 originally figured.

The 1945 production, which will run 85,771 units above 1944 output, will include 11,181 heavy-heavy trucks, 31,684 light-heavy, 110,114 medium and 35,904 light trucks. In addition, it is planned to produce 56,566 trucks for foreign distribution, against 23,566 last year.

The original program contemplated the manufacture of 120,552 trucks for domestic consumption and 12,858 for foreign distribution in the first half of the year, alone.

West Texas

New Oil Zone in Prospect For Keystone Structure

Extension and new oil zone in prospect for Keystone structure; Pecos County deep wildcat shows for small gasser from Pennsylvanian; Gulf Oil Corporation pays $280,000 for 172-acre lease near Jordan field.

Winkler County: An extension and new oil zone is in prospect for the Keystone structure through Sid Richardson & Bass' Kansas City Stock 1, 1½ miles southeast of 4700-foot Holt production and 2¾ miles southeast of Ellenburger wells, having recovered 600 feet of oil- and gas-cut mud at 7475-7533 feet. Most effective saturation was logged at 7487-97 feet, with possible pay above and below. This outpost was drilling lime at 7620 feet, but likely will set pipe and try for completion since it is structurally low, having topped the San Angelo at 5040 feet, or 402 feet low to nearest Holt pay well. The deeper pay is tentatively identified as Basal Permian.

The firm's Sanford 1, 1½-mile south and a projected Ordovician test, was drilling lime at 4350 feet.

Gulf Oil Corporation's Keystone 49-E, C NE NE PSL 11, Block B-3, and a mile southwest of the field's most southerly Ellenburger well, established first sulphur water in the Ellenburger, topped at 9153 feet, being 87 feet high, when tester at 10,100-10,150 feet returned the water cushion along with 4400 feet of oil and 2600 feet of sulphur water. A lower drill stem test will be made to determine the oil-water contact. This outpost has more than 950 feet of broken gas-distillate and oil pay, with first oil near the 9510-foot level. Continental Oil Company's Walton 1-D, ¼-mile west of Ellenburger production and first disappointment for the zone, was drilling at 10,495 feet without shows. Sun Oil Company's Keystone 2, 2 miles north by west of deep production and 1164 feet low, tested sulphur water from perforations at 10,337-10,360 feet, and will reperforate opposite the Waddell at 10,082-10,105 feet, while most promising oil zone is in the Silurian at 8566-8650 feet.

Pecos County: Phillips Petroleum Company's Ada Price 1, wildcat and temporarily the deepest drilled test with hole bottomed in Ellenburger at 15,279 feet, is showing for a small gasser from Pennsylvanian perforations at 11,450-11,550 feet. The gas flow was rated at 200,000 feet daily after using 500 gallons of mud acid, and increased to 290,000 feet daily following treatment with 1000 gallons of regular acid solution. This zone has since been retreated with 300 gallons of acid, and test is pending.

Garza County: Honolulu Oil Corporation and Devonian Oil Company's Hitt 1, 2⅓ miles east by north of the partnership's P-H-D pool discovery pumper at 3544-64 feet, produced gas to the surface and recovered 500 feet of gas-cut mud when tester was used at 3400-61 feet.

No increase in gas was reported in drilling to 3491 feet, where the test was idle for rig repairs.

Property Sale: Gulf Oil Corporation paid $280,000 cash for Joe Worsham's Connell 172-acre lease, embracing the NW¼ PSL Section 26, Block B-16, with 4 pumpers making 95 barrels daily. This property is on the west side of the Jordan field, where deep production prospects remain unexplored.

Deep Prospects: Stanolind Oil & Gas Company's Slaughter 1, Cochran County wildcat and 10 miles east by south of a failure that reached granite at 7356 feet, was drilling lime and shale at 9105 feet. The same company's University 1-D, Andrews County wildcat that passed up indicated production from Lower Permian and the Devonian, tested greater volume of water at 10,320 feet, having

previously tested water at 10,118 feet in Ellenburger, topped at 10,057 feet. Although the Ellenburger is eliminated as a source of production for this test, the hole is being carried deeper for geological information. The Texas Company's T. P. Land Tract 1-B, western Ector County Ordovician prospect, was drilling Devonian chert at 8155 feet. Magnolia Petroleum Company's Johnson 1, Lubbock County, was drilling hard lime at 9695 feet, and Seaboard Oil Company and Stanolind Oil & Gas Company's Cravens 1, northern Lubbock County, was changing to cable unit preparatory to acidizing after showing a small amount of oil and gas when partially swabbed down. The showing is from broken Clear Fork saturation at 6066-6170 feet, with the hole plugged back from 8800 feet.

Upton County: Humble Oil & Refining Company's Parrott 1 and Magnolia Petroleum Company's American Republics 1, both Ellenburger projects, were drilling at 7970 feet and 8180 feet, respectively, while Standard Oil Company of Texas' McElroy 1 was making a drill stem test at 6281-6463 feet, having plugged back from 7183 feet to 6850 feet.

Central West Texas

Stephens County Is Site Of Semi-Wildcat Strike

Mudge Oil Company's Adams 1, NW SW Sec. 2955 TE&L Company survey and 12 miles south by west of Breckenridge, is a semi-wildcat strike for Stephens County with flow of 3,000,000 feet of high pressure gas from Marble Falls perforations at 3870-3900 feet.

This prospect also indicated oil production in the 3400-foot Bend and the Ellenburger at 4110-18 feet, but failed to make a commercial producer from either zone.

Jones County: The Texas Company's McCright 1, Stephen Scallorn survey and ¾ mile northwest of the old Noodle Creek district with intermediate dry holes, pumped 44 barrels of oil and 4 barrels of water initial after acidizing through perforations in the Noodle (Camp Colorado) lime at 2536-46 and 2518-23 feet.

North Texas

Matlock Discovery Offset Logs First Saturation

Shell Oil Company Beggs 1, west offset to the Matlock pool discovery, Jack County, entered the Mississippian higher structurally in logging first saturation at 5238-50 feet, and showed gas on a drill stem test at 5244-91 feet. Pipe was cemented on bottom at 5291 feet to complete through perforations. Hanlon & Buchanan opened this deep pool, which is east of the East Bryson oil area.

James Stewart & Company's Kinder 1-D, B. H. Epperson survey A-208 and 2 miles east of the Sewell multi-pay field, Young County, iogged broken lime showing oil and gas at 4170-4212 feet in Marble Falls, topped at 4130 feet, and flowed 113 barrels oil daily while deepening from 4232 to 4360 feet. Kinder 1-D is lower structurally than nearest Sewell field deep producers, and will explore the Mississippian before attempting to complete. Pipe was cemented at 4025 feet after testing a small volume of oil in Bend, topped at 3843 feet with elevation of 1123 feet.

Archer County: Bridwell Oil Company's Hancock 1, NW SW H&TC Ry 3, Block 1, entered the Ellenburger at 5556 feet, considerably low to failures to the north and west, and was drilling at 5675 feet to establish the water level.

Clay County: Continental Oil Company's Morris 1, a mile south by east of the West Ross pool, will equip for pumping completion after bailing 24 barrels of oil and 27 barrels of fresh water daily from Strawn perforations at 4754-74 and 4778-96 feet, having plugged back from 5870 feet.

Grayson County: The Texas Company's Handy 1, Orlena area, cored 2624-36 feet, recovering 4 feet of sand carrying nominal oil saturation, and resumed drilling. This wildcat is being drilled primarily for geological information that may serve as a basis for a deep test.

Cooke County: The Texas Company's Beasley 1, ⅞-mile west by south of its recent Strawn discovery from 6755-63-foot zone on the Sivells Bend prospect, flowed 152 barrels of 43.6-gravity oil on 8-hour natural gauge through ½-inch choke, with pressure on tubing ranging from 1120 to 35 pounds and on casing from 1150 to 235 pounds. This production is from a deeper sand, with perforations at 6817-63 feet, and materially enhances the outlook for the area.

East Texas

Pittsburg Field Outlying Tests Fail in Trinity

Two outlying tests for the Pittsburg field, Camp County, are failures in the lower Trinity. Third producer in the Winnsboro field makes greater flow with reduced gas-oil ratio. Official gauge on the recent Henderson County discovery by Lone Star Producing Company on the R. H. Lee 109-acre tract, Athens area, amounted to 261 barrels of 46-gravity oil natural through 5/32-inch choke from Bacon (upper Rodessa) perforations at 8198-8208 feet.

Wood County: Delta Drilling Company's Mosley 1, Seth W. Mitchell Survey and ½ mile north by east of the Oak Grove prospect, was drilling at 4950 feet and checking 35 to 60 feet high on chalk markers. This is considered sufficient structural relief to make a producer. Roy L. Fisher and F. R. Jackson's McCarley 1-B has been shut in since September, 1943, with low gravity oil standing 2000 feet from surface. This production is from Woodbine perforations at 5416-26 feet.

Winnsboro: Amerada Petroleum Corporation's Gamblin 1, third producer for the field and the second from the upper pay, flowed 202 barrels of 57-gravity oil with gas-oil ratio of 8946/1, natural through 20/64-inch choke from perforations in the Bacon (Upper Rodessa) at 7845-62 feet. This well is scheduled to make a test through perforations of the 8200-foot Gloyd, and if the latter is productive a dual completion is likely. Amerada Petroleum Corporation is starting Gamblin 2, situated 934 feet north. Completion tests are due this week on Gulf Oil Corporation's Petty 1-A and H. L. Hunt's Craddock 1, 4000-foot west outpost and the highest on structure.

Camp County: Gulf Oil Corporation's King 1-A, 1¼ miles south of the most easterly production in the Pittsburgh field, which has 22 producers and no failures, missed the 7900-foot pay, and had reached the water level in drilling Travis Peak at 8460 feet. Harry S. Moss et al's Brisoncounty 1, 2⅓ miles east of the field, was abandoned at 8275 feet, having correlated 145 feet low on markers below the massive anhydrite.

Titus County: Humble Oil & Refining Company's Searcy 1, Smackover project for the Mount Pleasant area and deepest active test in the district, was drilling at 11,220 feet, having entered the Cotton Valley at 9135 feet.

Van Zandt County: Lone Star Producing Company's Goode 1, D. Rose survey and 1⅔ miles south of Van, was drilling lime at 5030 feet, correlating somewhat low to 2 Travis Peak failures in the north sector of Van field.

Harrison County: Stanolind Oil & Gas Company and Continental Oil Company's Harris 1, southeast of Woodlawn in Thomas Gray survey, is shut in, bottomed at 6870 feet. A test with packer set at 6487 feet, using 1000 gallons of acid, swabbed fresh water with traces of oil until packer failed. It was reset at 6485 feet, the well acidized with 4000 gallons of acid, and swabbed to 4500 feet, showing 3 percent oil of 36.6-gravity, and 97 percent fresh water, accompanied by 1,000,000 cubic feet of gas.

Gregg-Tex Gasoline Corporation and Hanlon Gasoline Corporation's T. B. Page 1, in H. White survey, is drilling below 5602 feet.

Shelby County: Humble Oil & Refining Company is drilling below 6826 feet, after reaming hole to 6688 feet in shale and lime in Pickering Lumber Company 1, S. Francois survey, 9 miles east and a mile south of Shelbyville. This is the most important wildcat in the area, and considerable leasing is being done, now that there are unofficial reports of showings in the well. The well is credited with indications of oil or gas-distillate in a core from 6600-20 feet. A core from 6280-6300 feet recovered 20 feet of shale, with no show; and one from 6300-20 feet recovered 5 feet of shale with no showings. The oil indications are reported in the Pettit horizon.

Southport Petroleum Company's R. C. Poore 1, in Holmes Byfield survey, is waiting on cement after squeezing off 75 perforations from 6405-22 feet. Operators washed hole and treated with 3000 gallons of acid. The well kicked off, flowing gas and wash water with acid, showing 100 pounds pressure on casing and 600 pounds on tubing at the end of 6 hours, then died in 6 hours after loading with salt water.

H. & A. Corporation's C. A. Hayden 1, D. T. F. York survey, made a drill stem test at 5380-5485 feet, recovering 12 stands of mud and salt water with slight gas and oil indications, and is now drilling below 5800 feet.

Panola County: McAlester Fuel Company perforated J. B. Hunt A-1, in Wayatt Anderson survey, from 8360-80 feet in the Cotton Valley series with 48 shots. Operators washed well and

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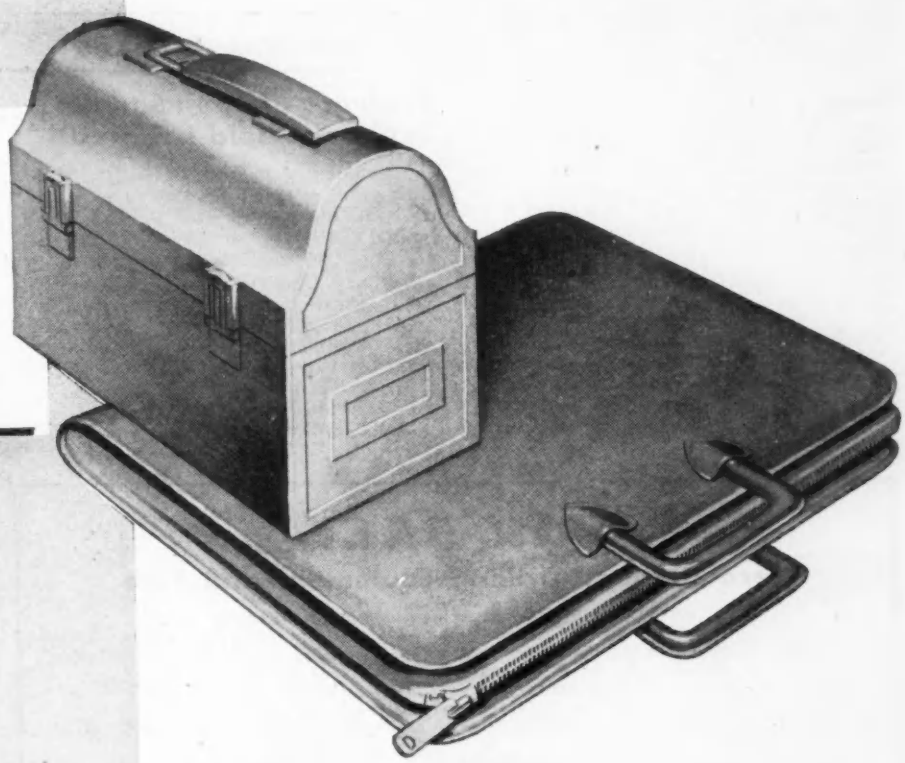

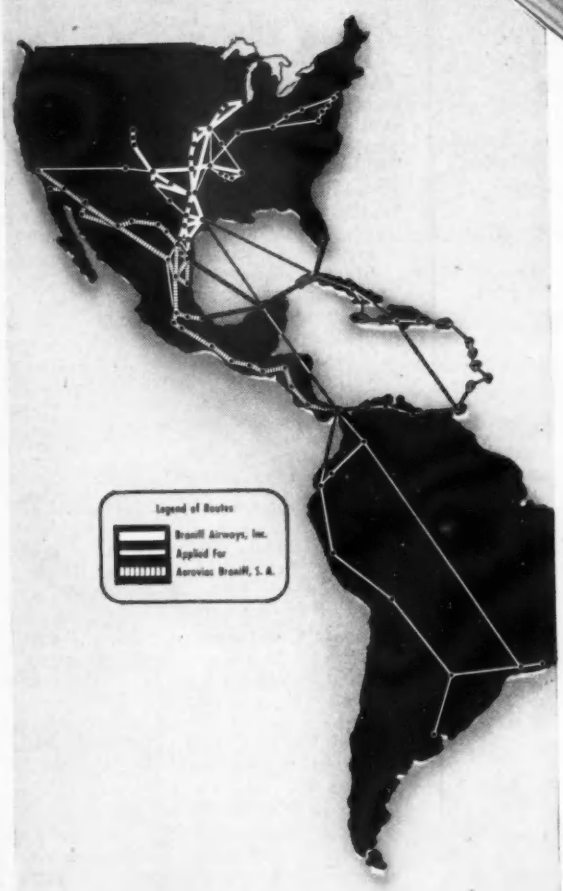

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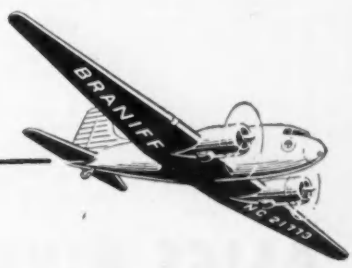

swabbed down to 4500 feet, recovering wash water with a slight show of gas. They reperforated from 8390-8400 feet with 24 shots, washed and ran 2-inch tubing with packer at 8318 feet, then swabbed down to 4500 feet and recovered wash water and some gas. New preparations for reperforating and testing are under way. Total depth is 9022 feet. This indication of gas in Cotton Valley is deeper than production in the Carthage field.

☆

JOHN J. HILL has been promoted to superintendent of the Fort Worth division of the Stanolind Pipe Line Company, having formerly been assistant to his predecessor, O. H. Powell, who has retired.

Southwest Texas

Evidence of Deep Sand in Willamar Field Is Noted

Evidence of deep sand in the Willamar field, setting of tanks at a wildcat, and starting of new deep wildcats, make Willacy County one of the most interesting in the district this week.

Willacy County: Pan American Production Company's A. B. Crane 1, the scheduled 12,000-foot test in the middle of the Willamar field, is drilling below 10,115 feet in shale after the well showed a pronounced kick while drilling at 9990 feet. The well showed pressure of 500 pounds on the blowout preventer before being closed in. Mud was conditioned to considerably greater weight and drilling continued.

The Texas Company has shut down Yturria Brothers Land & Livestock Company 2, wildcat in the Jose Narcisso Cabazos grant, while waiting for tanks before it continues testing. No details on previous tests have been reported. It drilled to 8015 feet, set casing at 6920 feet, and made several tests in coming back to about 6200 feet.

Magnolia Petroleum Company and J. S. Abercrombie made location for H. H. Dohe 1, as an 11,000-foot wildcat 3 miles southwest of Raymondville in the San Juan de Carricitos Grant, Sec. 5, Lot 6.

Humble Oil & Refining Company has made location for W. S. Murphey 1, wildcat a mile north of San Perlita, in the San Juan de Carricitos Grant. It is scheduled to 10,000 feet and is in Lot 12, Block 75, Gulf Coast Irrigation Company subdivision.

Brooks County: Humble Oil & Refining Company's Dan Sullivan 1, wildcat 8 miles southeast of Falfurrias, is drilling and coring below 7661 feet in shale with no shows reported below 7513 feet, where a drill stem test showed 15 gallons of 53-gravity condensate. A test was made at 7529-36 feet, but recovery was nothing but mud with a slightly salty taste, no distillate or gas.

Starr County: Sun Oil Company's J. G. de Garza 1, North Sun field outpost, flowed at a rate of 160.08 barrels of 44.7-gravity oil in 24 hours through a 9/64-inch choke with tubing pressure 715 pounds and casing pressure 1375 pounds. Casing was perforated at 5606-09 feet after the well was drilled to 6995 feet.

George Echols of Houston will drill 2 shallow wildcats in Starr County, 12 miles northwest of Rio Grande City. His Starr County Cattle Company A-1 and A-2, will be 3100-foot tests, both in Porcion 89. No. A-1 is in Block 16, Jeffries subdivision, and No. A-2 is in Block 38 of the same.

Zapata County: Humble's McDermott 1, wildcat 25 miles north of Roma, is still testing through perforations at 2508-18 feet. On latest test it flowed at the rate of a barrel of oil in 3 hours through a ¼-inch choke with tubing pressure 350 pounds and casing pressure 200 pounds.

Wilson County: L. D. Ormsby's Williamson Heirs 1, wildcat which is expected to open a new producing area 9 miles northeast of Floresville, is preparing to rig pumping equipment. At total depth of 5084 feet with casing set at 5028 feet, it swabbed considerable oil, but would not flow, even after acidization.

Victoria County: Sohio Petroleum Corporation and Wiggins & McFerron's Albert Albrecht 1, wildcat 15 miles west of Victoria, blew out while coming out of the hole from 4213 feet, but was brought under control without damage. It is drilling below 4274 feet in shale. On electric log to 4005 feet it has shown indications of gas in the Catahoula and Frio sands.

Jim Wells County: Edwin M. Jones is planning to work over the old M. A. Evetts B-5, dry hole in North Magnolia City field, and try for completion at about 5416 feet. The well had been abandoned at 5510 feet in January, 1944, but Jones will set pipe for a production test.

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2—16″ 3000-lb. Test Cameron Preventers, A-1 condition.....$1500.00
2—7″ Cameron Fluid Operated Tubing Preventers, 2″ and 2½″ Rams.....$ 475.00
1—7″ Reagan Tubing Preventer, new, with hydraulic pump.....$ 475.00

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2—Lucey 108 H.P. 250 W.P. complete with all fittings, excellent condition.....$1500.00
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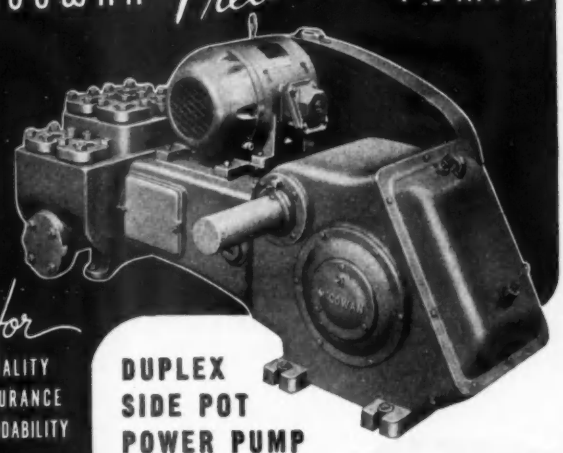

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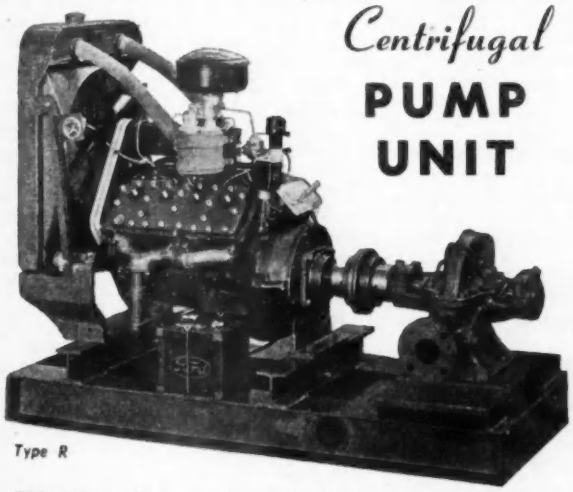

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NEW ORLEANS HOUSTON DALLAS

tion for an 8500-foot test in the Southeast Premont field. Charles Von Blucher 5 will be located 400 feet from the south and 1750 feet from west line of Survey 348.

Virginia Map Prepared By Geological Survey

Issuance of a detailed geologic map of Virginia's only oil area, the Rose Hill Oil field, was announced last week by the United States Geological Survey.

Pointing out that the field, discovered in 1942, now has only two producing wells, Director William E. Wrather explained that development has been hampered by the unusually complex geologic structure, the Trenton limestone of Middle Ordovician age in which the oil is found at a depth of about 1000 feet being concealed throughout most of the area under a great overthrust slice of older nonpetroliferous rocks.

The bureau also has completed a map of Wyoming showing the locations of some 1400 test wells that lie outside of known productive fields, indicating the results of the drilling and total depth of the hole, as well as some 250 known anticlinal axes and all the oil and gas fields that have been, or are now, producing.

Copies of the two maps are available for sale, the Virginia map (Preliminary Map 20 of the Oil and Gas investigations series) and the Wyoming map (Preliminary Map 19) both being priced at 50 cents per copy.

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Texas Gulf Coast

Sand in Silsbee Field, Hardin County, Opened

A new sand has been opened in Silsbee field, Hardin County, 500 feet deeper than the regular field pay. A test is scheduled soon on a Tyler County wildcat which showed gas and condensate while drilling. A producer seems likely for the south flank of the Danbury Dome. Pan American is testing its Colorado County wildcat, and Cities Service Oil Company is extending its Ramsey field in the same county.

Hardin County: American Republics Corporation and Houston Oil Company's Brooks Fee 10, old Cockfield sand producer which had been deepened to 8905 feet in search of new pays, has been completed, opening a new sand about 500 feet deeper than the regular sand. It had plugged back to set 5½-inch liner at 7832 feet, which has been perforated at 7455-60 feet, in Yegua sand, and on initial potential test flowed 468 barrels of 43.8-gravity oil daily through a ¼-inch choke with tubing pressure 800 pounds and gas-oil ratio only 577-1. The field probably will be drilled to this new pay, for a number of new producers, but most of any other deeper drilling will have to be in new wells, since the operators had set 5½-inch casing throughout most of the field to the upper sand. The No. 10 well had set 7-inch pipe when first completed.

Houston Oil Company and American Republics' Hardin Fee 2, second test at Village Mills, and located 1½ miles south of the discovery well, is drilling below 6303 feet in shale.

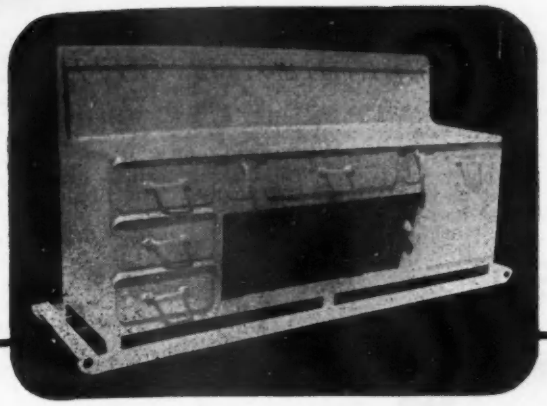
On the northwest flank of the Sour Lake Dome, The Texas Company's Kirby 1 is waiting on cement after having perforated casing and made a squeeze job before running a production test. Total depth is 4806 feet with 5½-inch casing at 4636 feet.

Tyler County: The Atlantic Refining Company's Houston-American, wildcat in Sec. 3, BBB&C RR Survey, 6 miles of Hillister, is waiting on cement after running 5½-inch casing to 8675 feet. Total depth is 9015 feet. Gas-condensate showings have been reported which are scheduled for production tests. Electric log has been run to bottom. The gas and condensate had been recovered on a drill stem test at 8368-8460 feet.

Brazoria County: Humble Oil & Refining Company's Frank Schmidt 1, on the south flank of the Danbury Dome, northeast part of the county, is flowing at the rate of 13 barrels per hour through ¼-inch choke and is opening the first production on this flank of the dome. Originally drilled to 9284 feet, it has made a number of tests coming back up the hole, with present test being made at plugged-back depth of 7625 feet. It ran tubing to 7497 feet and the well started flowing without being swabbed. At latest report the well was showing tubing pressure of 600 pounds and ratio of approximately 700 to 1.

Stanolind Oil & Gas Company's Adolph Suderman 1, wildcat northeast of the Chocolate Bayou field, is drilling below 6000 feet in hard shale.

Gulf Oil Corporation's Mrs. S. M. Allen 2, deep test on the flank of the Allen Dome, is having trouble with heaving shale after reaching a depth of 12,667 feet, and cemented back to 11,



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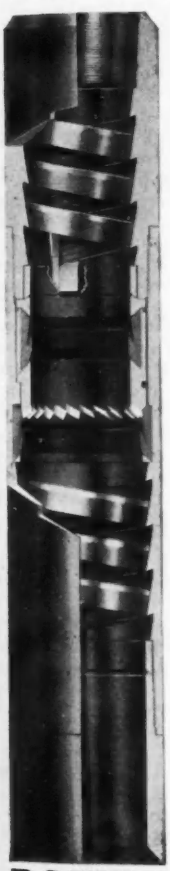

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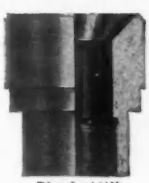

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196 feet, where it is waiting on cement.

Colorado County: Pan American Production Company's Mrs. R. L. Williams 1, wildcat 8 miles west of Eagle Lake, is making a series of tests, working up from the lower sands. First test was with casing perforated at 8910-24 feet, and showed some gas-cut mud and salt water. It squeezed and is now testing at 8804-14 feet. It had previously recovered high-gravity green oil on a test at 8372-90 feet.

Cities Service Oil Company made a test in its Frank Stephens Co. C-1, 3551 feet southwest outpost to the Ramsey field, with casing perforated at 8948-53 feet and 8984-89 feet, flowing 101 barrels of 51-gravity condensate in 10½ hours through a ¼-inch choke at bottom and ⅜-inch choke at top, with working pressure 1650 pounds. It also showed gas at the rate of 4,000,000 cubic feet daily. It is now perforating the entire section from 8948-80 feet before making final completion.

Wharton County: Jack W. Frazier will drill his Otto Mathys 1, a wildcat in the Henry Griffith Survey, 2 miles northwest of Mackey. Amerada Petroleum Corporation's Jennie M. Smith 1 will be a ¾-mile north outpost to the Daboval field, located on an 80-acre lease in ETRR Survey 59, and will go to 7400 feet to test all sections, including the discovery pay.

Covell Decorated

Major General William E. R. Covell, chief of the Services of Supply for the India-Burma theatre, was decorated January 8 by Major General Edmund B. Gregory, the Quartermaster General, with the Distinguished Service Medal for his work in organizing the fuels and lubricants division of the Quartermaster General's office.

Covell was made head of the division upon its inception on June 1, 1943, with the responsibility for the procurement, storage and distribution of virtually all petroleum products used by the Army in this country and in theatres of operation, with the exception of aviation fuels and lubricants.

South Louisiana

Oil Field Is Opened in Acadia Parish, Iota Area

An oil field has been opened by Union Sulphur Company in Acadia Parish in the Iota area. Another sand has been opened on the flank of West Gueydan Dome, Vermilion Parish, and recompletion of an extension to West White Lake shows best flow yet. Test is being made in West Tepetate field.

Acadia Parish: Union Sulphur Company's Medlenka 1, wildcat in 11-8s-2w, on the Iota prospect, made a test which assures a new oil field for the parish, on the strength of a drill stem test which flowed oil for 26 hours from perforations at 9664-72 feet, making 31-gravity crude oil with working pressure varying from 100 to 200 pounds. After the test, casing was reperforated with 16 more holes at 9664-72 feet and with additional 24 holes at 9672-76 feet before running tubing for production test. It was flowing into the pits through a 15/64-inch choke, showing tubing pressure of 200 pounds.

Sun Oil Company's Estherwood Township developed a salt water flow at 11,363 feet and is installing a blowout preventer after killing the flow.

Vermilion Parish: The Pure Oil Company's Ferguson-Benoit Unit 2, on the southeast flank of the West Gueydan Dome, where the company recently opened a new pay sector with its Ferguson-Benoit 1, has been completed through perforations at 10,060-070 feet to open another sand. Initial gauge totaled 168 barrels of 38.1-gravity oil in 24 hours through a 7/64-inch choke with tubing pressure 1625 pounds. Total depth is 10,772 feet with 5½-inch casing landed on bottom. First well here was the company's Ferguson-Benoit 1, completed in November through perforations at 9619-23 feet, making 213 barrels of 37-gravity oil daily through a ⅛-inch choke.

In the West White Lake field, Union

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Oil Company of California's State-White Lake B-1, which extended the field more than ½ mile southeast when completed through perforations at 11,830-840 feet, has made 2 tests after squeezing off those perforations and latest test is with casing perforated at 11,840-845 feet, where it is flowing at the rate of 12 barrels of 33.8-gravity oil hourly through a 10/64-inch choke with tubing pressure 1575 pounds, along with 124,000 cubic feet of gas daily. On the original completion at 11,820-825 feet it showed only 7 barrels in 4 hours, then made 6 barrels per hour from the 11,830-840-foot level. An intermediate test at 11,834-842 feet showed a little oil and then went to gas.

In the South Abbeville area, The Texas Company's LeBoeuf 1, in 32-12s-3e, is drilling below 8450 feet in shale and sand.

St. Landry Parish: Claude Morgan et al's Frank Dimmick 1, wildcat in the Shuteston area, is waiting on orders at 10,414 feet after running an electric logging survey. It had reported gas showings in cores up the hole, but operators have not indicated whether a test will be made.

In the North Cankton area, Sun Oil Company's Boagni B-3 is reported flowing pipe line oil through a ⅛-inch choke with tubing pressure 600 pounds, but no gauge has been reported. Total depth is 10,250 feet with 7-inch casing on bottom.

Jefferson Davis Parish: Barnsdall Oil Company et al's Joseph Fuselier 2, third test in the new West Tepetate field, which may prove to be the most important discovery of 1944 for South Louisiana, is testing with casing perforated at 9194-9202 feet in the lower sand, opened by the Miller 2. No results have been reported. Total depth is 9236 feet with casing landed on bottom.

St. Martin Parish: Stanolind Oil & Gas Company's Iowa-St. Martin Land Company 1, on the Section 28 Dome, has plugged back from 11,240 feet, set 7-inch casing at 10,950 feet, and is running a production test through perforations at 10,694-704 feet.

Yeuga Corporation has made location for a new wildcat in 48-7s-6e, near Arnaudville. Its Olivier & Burdin is contracted to 10,700 feet with Crosby Drilling Corporation as contractors.

Continental Oil Company and Standard of Kansas' Liquidators 1, at St. Martinville, is drilling below 9605 feet in shale.

North Louisiana

Opening of New Fields in Two Parishes Indicated

Wildcat activity was generally less in North Louisiana, though drilling continued steadily in Richland Parish, where a new wildcat was staked. Further promise of the opening of new fields was reported from Natchitoches and Caldwell Parishes.

Natchitoches Parish: The California Company is reported to have logged a 17-foot show in the Rodessa section from 5166-5133 feet in Annie Morrison 1, 12-13n-8w, and drilling is suspended while intermediate string of casing is being set, before the well goes on to 8000 feet. Other reports indicate the well logged another sand from 3295-3333 feet, with gas and distillate in the upper section and oil in the other portion. Anhydrite was topped at 5038 feet and based at 5116 feet. Leasing is stepping up around the well, which is on a block of about 8500 acres held by the California Company and Signal Oil Company.

Concordia Parish: The Lake St. John field has been extended 2 miles south by The Carter Oil Company's George Murray, 31-9n-10e, now ready for final testing. The well came in in December and flowed through a 10/64-inch choke into pits after 140 perforations were made opposite the Massive sand from 9075-9110 feet. The company has already started a new test nearby, and this area undoubtedly will receive a play in 1945.

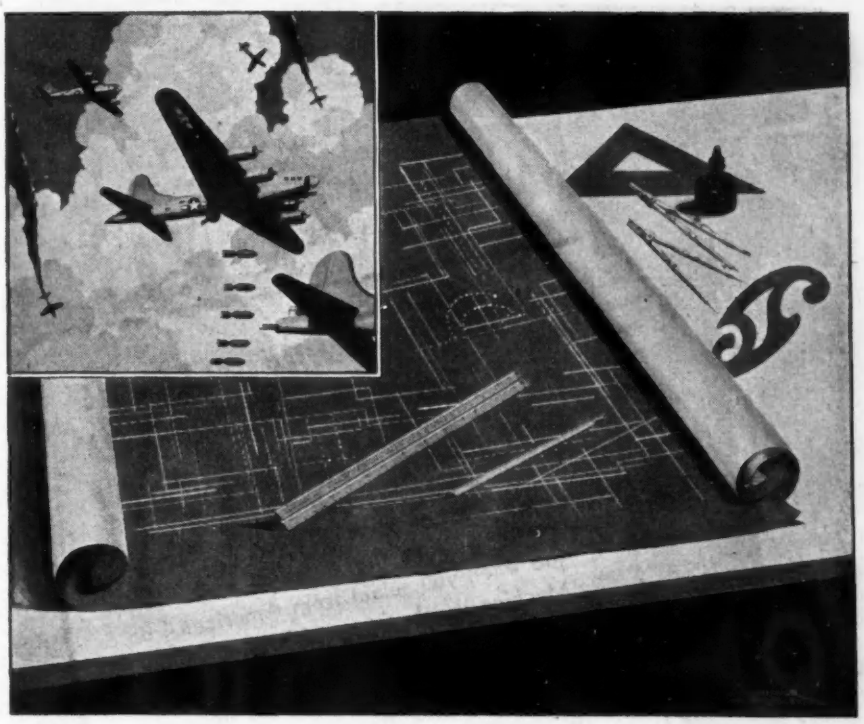
Caldwell Parish: Shell Oil Company is drilling below 10,945 feet in shale and lime in Louisiana Central Lumber Company 1, NW 31-15s-3e, which has all the earmarks of a gas or gas-distillate discovery, and which blew out of control in September at 10,141 feet. Since the hole has been reconditioned the company plans to explore deeper horizons before testing upper showings.

Richland Parish: One failure was offset by a new location. C. W. Sharp et al's Cochran & Franklin 1, C NW SE 41-17n-8e, was temporarily abandoned at 3450 feet, but reported a slight show of oil at 3294-3303 feet. The Glen Rose sand, topped at 3106 feet, carried salt water.

Rogers Lacy located B. May 1, C SW NW 26-17n-9e, for a 3500-foot test.

M. J. Houston and Rogers Lacy's Duckworth Estate 1, was drilling below 3205 feet and feeling for the sand.

Roy L. Fisher's Graham Unit 1, 13-17n-9e, near Delhi township, has failed



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to obtain showings indicative of commercial production at total depth of 3316 feet. The well has been written off as a failure.

H. L. Woods et al are drilling below 3290 feet without shows in Ellett Munholland 1, NE NE 20-17n-9e, 1 mile north of the Delhi discovery and scheduled to 6000 feet.

☆

PAUL L. LYONS, chief scout for Stanolind Oil Purchasing Company, has accepted a position with Warren Petroleum Corporation in the land department and will be stationed in Houston. Lyons was affiliated with Stanolind 24 years and was a member of the Nomenclature Committee of the Mid-Continent Oil & Gas Association in Tulsa. Pat M. Broach is acting chief scout for Stanolind.

Arkansas

Several Wells at Testing Stage Are Disappointing

Several wells at the testing stage had disappointing results; a wildcat was staked in Union County; and Stephens and Fouke fields have new tests.

Miller County. Arkla Oil Company's R. T. Dodd 1, 11-19s-28w, acidized after swabbing from perforations at 6275-85 feet and tested salt water. The well has shut down. Total depth is 6810 feet.

The Atlantic Refining Company's Montana Realty 1, 17-17s-28w, is drilling below 8150 feet.

In the Fouke field, The Carter Oil Company is moving in rotary for O'Brien unit 1, 33-16s-26w. The company completed S. Harvey 1, 33-16s-26w from 72 perforations at 3410-20 feet. The well flowed 62 barrels in 24 hours, with total depth 3648 feet.

Union County: National Associated Petroleum Company's Annie Smith 1, NE NE NE 17-16s-17w, is reported to have logged sand with slight showing of oil from 3992-94 feet in the lower section of the Travis Peak, topped at 3278 feet by electrical survey. Drilling is continuing below 5060 feet.

Marine Oil Company's L. O. McGough 1, C NE NW 34-17s-13w, cored hard tight sand showing oil from 3370-79 feet, topped Cotton Valley by samples at 4012 feet, and is drilling below 4502 feet.

C. H. Murphy, Jr., has made a wildcat location for a Smackover lime test, C. H. Murphy 1, 4-19s-15w.

Van Buren County: Lion Oil Refining Company's Griggs 1, 23-10n-13w, is drilling below 4085 feet.

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Southeastern

Marion and Jasper County Wildcats Hold Interest

Interest is held by Humble Oil & Refining Company's Marion County wildcat, which tested gas last week, and by Gulf Refining Company's wildcat in southwestern Jasper County. Most other sections of Mississippi were active with routine operations.

Marion County: Humble's A. Evans 1, wildcat on the southwest flank of the Lampton salt dome, prepared to drill below 9254 feet after a drill stem test in the Massive Tuscaloosa sand section, at 9244-54 feet, recovered salt water and drilled mud with no oil or gas. The sand probably is the upper body of the Tuscaloosa Massive section. Earlier the well seemed to be assuming importance, having taken a 4-hour drill stem test at 9064-79 feet that showed 1600 feet of gas-cut mud and 278 feet of mud cut with gas and distillate, giving rise to hopes that good showings might be found in the Massive sand.

Gulf's R. H. Bradshaw 3, in the eastern part of the county, is drilling below 8762 feet in shale with no oil or gas shows reported.

Jasper County: Gulf Refining Company is standing at total depth of 7787 feet in its Bailey-Edwards Unit where it has completed a series of cores showing oil, and probably will make a drill stem test before drilling. Coring from 7769-87 feet recovered gray sand and sandy shale with evidence of saturation with heavy black oil, all in the upper Massive sand section, but operations were halted by high water. Previously the well had shown gas and distillate on a drill stem test at 6592-6650 feet in the Eutaw section and probably would make a well at that point. The prospect, known as the Soso, is in the southwestern corner of the county, southwest of the Heidelberg field.

Sinclair-Wyoming Oil Company has set 1008 feet of surface casing in its important wildcat, W. A. Bethea 1, located 4 miles north of production in the Heidelberg field.

Claiborne County: Sun Oil Company's W. H. Hammett 1, another test on the Bruinsburg dome, where the company

recently completed a shallow gasser, has reached 1446 feet and is preparing to take an electric logging survey to identify the gas sand found below 900 feet in the discovery well.

Danciger Oil & Refining Company's Claude Taylor 1, wildcat in 51-13n-3e, on the Willows prospect, is drilling below 7202 feet in shale, looking for the Chalk after picking up top of Midway at 6651 feet from samples, which would indicate an abnormally thin Wilcox section.

Adams County: The Pure Oil Company is making a drill stem test with casing perforated at 10,304-309 feet in its McDowell 2, near Natchez and southwest of Cranfield field, but no results are available. On the latest complete test, with casing perforated at 10,305-310 feet, it flowed 3 barrels of water and 1 barrel of distillate per hour before being killed for a squeeze job. There are several sands above this, in the neighborhood of 10,275 feet, which may be tested further.

Smith County: Gulf is preparing to move in materials to King 1, in the center of the northeast of the southwest of 8-10n-13w, on the flank of the New Home Dome, Smith County. Rig will be skidded from the O. P. Foley 1 location just north of the present location, since the Foley well hit cap rock and lost returns at a shallow depth.

Sharkey County: British American Oil Producing Company's Houston 3, deep test in the Cary field, is drilling below 5156 feet in shale, where it has been in the Cotton Valley for some time. It was started as a 10,000-foot test with Parker Drilling Company as contractors.

Alabama

Alabama has two actively drilling wells. Bunte Oil Company et al's S. P. Chapman 1, C NE NW 30-9n-3e, Clarke County, is drilling at 4790 feet in hard shale. In Wilcox County, Southern Natural Gas Company's Fannie Stokes 1, C SW NW 32-12n-5e, 6500-foot test on a block of 15,000 acres, is drilling below 3420 feet. The well is reported to have drilled without shows.

Florida

Humble Oil & Refining Company has spudded G. C. Carleton 1, C SW NE 34-38s-29e, Highlands County, and is now 104 feet in sand and clay. The company is still rigging up after changing rigs at Gulf Coast Realties 4, 20-48s-30e, Collier County; and is drilling below 10,426 in chalky lime and anhydrite in State 1, C NE NW 30-66s-36e, Dade County.

Georgia

Georgia has two wells, only one of which is active. Sun Oil Company's Doster-Ladson 1, Land Lot 71, Land District 7, Atkinson County, is drilling below 1610 feet. Tropic Oil Company's Gibson 1, 4½ miles southwest of Lyons, is still shut down. Sandy lime showing gas is reported to have been logged from 450-500 feet.

Lubrication Engineers Organize, to Meet Soon

Lubrication engineers representing industrial and transportation companies and educators have formed the American Society of Lubrication Engineers, with headquarters at 135 South LaSalle Street, Chicago.

A recent bulletin explains that "lubrication engineers have felt the need of a national organization . . . Our objective is to put on a sound basis the fundamental precepts of lubrication, which we believe will be of benefit to all phases of industry with their many related problems . . . We also believe that the endeavors of our society can be accomplished without conflict with or injury to existing engineering societies having lubrication sub-divisions."

The society's first national convention will be held in the Stevens Hotel, Chicago, February 8 and 9. The program, under the direction of Chairman E. M. Kipp, of the Aluminum Company of America, will present technical papers by leading authorities on subjects pertinent to the lubrication profession in a great many types of industries.

Nelson Heads Nomads

New officers for 1945 of the Houston chaper of Nomads will be installed at the annual dinner-dance at the Rice Hotel, Friday, January 26. These include: T. W. Nelson, Gulf Publishing Company, president; W. A. Davis, Baker Oil Tools, vice president; Charles Thornhill, Thornhill - Craver Company, secretary-treasurer; E. L. Lorehn, Cameron Iron Works, assistant secretary-treasurer; E. F. Baldwin, Hughes Tool Company, sergeant-at-arms; Ray Doan, Coffing Hoist Company, assistant sergeant-at-arms; C. W. Whitney, Baker Oil Tools, regent. H. J. Craig, Baash-Ross Tool Company, ex-president, also becomes a regent.

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TRADING POST SECTION

ON PAGE 67 OF THIS ISSUE

Because of the scarcity of certain types of new equipment and the fact that some operators may have a surplus of some items and a serious shortage of others, this **Used Equipment Forum** is performing a valuable service to operators in locating needed used materials or disposing of surpluses that may be needed by others.

California

Ant Hill Area Test to Be Drilled by Amerada Firm

Amerada Petroleum Corporation is preparing to drill Siefus 1, in the Kern County Ant Hill area, 330 feet south and 2310 feet east from the northwest corner of 22-29-29. S. P. 7-15 is shut in for lack of storage. Last production was 82 barrels per day of 13.0-gravity oil S. P. 38-15 is producing 242 barrels per day, 39.0-gravity.

Standard Oil Company of California's Standard-Fullerton 1, in 25-27-23, drilled to 14,770 feet, plugged to 7600 feet and the 9⅝-inch casing perforated and squeezed at 7445 feet for shut off points above and below the zone to be tested. Intervals to be tested are 7580-60 feet, 7500-7485 feet and 7470-7455 feet.

Los Angeles County: Barnsdall Oil Company-R. S. F. 44, deep test of the Newhall-Potrero field, has logged the 5th and 6th zones but neither has been tested. An electric survey placed the 5th zone from 9030 feet to 9230 feet and the top of the 6th zone at 9670 feet. At 10,119 feet the well was still in the 6th zone.

Ventura County: Beloil Corporation, Ltd.-Hickey-State 1, tideland test near Rincon, failed to secure a shut off on the recement job on the 8⅝-inch casing at 3600 feet and is drilling at 3850 feet. Below 3628 feet oil sand and gray sand was logged.

Rocky Mountain Area

Northwestern Colorado Wildcat Is Abandoned

Northwestern Colorado wildcat abandoned; Ohio abandons Lysite, Wyoming, wildcat.

Haymower: Pacific Western Oil Corporation has abandoned its Haymower Dome wildcat in Moffat County, Colorado. The well, Unit 1 in NE NW NW 31-12n-101w, was abandoned at a total depth of 4030 feet in what was believed to be pre-Wasatch beds. Drill stem tests taken at various intervals failed to recover oil.

Lysite: Ohio Oil Company's State 1, NE NW NW 16-39n-91w, in the Lysite area, Fremont County, Wyoming, has been abandoned at a total depth of 2500 feet. The Sundance was overthrust at this location, drilling having commenced in the Sundance and drilled to 330 feet. The well drilled into the Tertiary at 330 feet and was still in this formation at the total depth. A core taken in the Tertiary from 821-831 feet showed slight saturation and dips of 12 to 40 degrees. A drill stem test at 944-1020 feet recovered oil-cut mud.

Illinois Basin

Wabash County Test Shows For McClosky Producer

Test in Wabash County, Illinois, showing for McClosky lime producer; casing set for test of McClosky pay in wildcat near Parkersburg; Edwards County test completed on McClosky lime.

Wabash County: Duncan and Ashland Oil and Refining Company's Schroeder-Kline 1, SE NE NE 27-2s-14w, about a mile northwest of Cowling and northeast of present production, is showing for a McClosky lime producer. On a drill stem test at 2930-35 feet, the well showed gas in 5 minutes and a flow of clean oil in 30 minutes. Casing was set for test.

In the Mount Carmel pool, C. E. Skiles' Baumgard 3-C, N½ SW SW 5-1s-12w, flowed 525 barrels of oil in 24 hours from McCiosky and O'Hara lime.

Richland County: Francis Vickers has set casing for test of doubtful McClosky pay at Bradley 1, SE SE SW 25-2n-10e, a wildcat south of Parkersburg.

Five miles east of Clay City, The Pure Oil Company has set casing for production test of McClosky lime at Maddox 2, NW SW SW 18-3n-9e. On a drill stem test the well made 800 feet of oil and 120 feet of oilcut mud in an hour.

Pure's Koertge 1, NE NE NW 33-3n-10e, a pool opener recently completed in McClosky lime, has been given a production rating of 94 barrels in 12 hours after 5000 gallons of acid.

Edwards County: Aetna Oil Company's Van Schoick 1, SE SE SW 7-1n-10e, about 7 miles west of West Salem, has been completed in McClosky lime at 3231-41 feet for initial yield of 300 barrels of oil per day through choke. The well was given 3000 gallons of acid.

Washington County: National Associated Petroleum Company is drilling Kuhn 1, SW SE NW 28-1n-1w, in wildcat territory west of Wamac as a tight hole.

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Michigan

Bay County Has First New Field Prospect in Weeks

The first new field prospect in weeks, Walton and Stewart's Angor 1, NE NE NW 27-18n-3e, Bay County, showed 200 feet of oil on a bailer test before 5-inch casing was cemented at 2910 feet. Dundee top was logged at 2925 feet, with the pay at 2937 feet, where hole was bottomed to case. Outpost is about 5 miles southwest of the Adams field in Arenac County.

Mecosta County: Wagenaar and Fisher-McCalls' Lane 1, NE NW NW 3-14n-10w, closely watched wildcat because of its favorable structural position, failed to show in Dundee lime, logged at 3416 feet, and had picked up show of salt water at drilling depth of 3541 feet in Monroe. The Monroe dolomite section was topped at 3509 feet.

WESTERN CANADA

Jumping Pound Discovery Well Shows Improvement

Shell of Canada's 4-24-J discovery well at Jumping Pound has shown improvement in gas-oil ratio under experimental operation as back pressure was increased. Improvement was obtained by sharp curtailment of gas flow, coupled with a gain in output of light crude oil.

Through a 30/64-inch choke, with tubing pressure up to 1700 pounds, the well flowed 7,650,000 cubic feet of gas and 93 barrels of 49- to 52-gravity oil on a 24-hour run, showing gas-oil ratio of 82,260 cubic feet per barrel. Previously, with tubing pressure 1685 pounds, the yield was 7,250,000 cubic feet of gas and 85 barrels of oil, for gas-oil ratio of 85,300. A day earlier, with tubing pressure 880 pounds, gas yield was 11,200,000 cubic feet and oil 83 barrels, for a gas-oil ratio of 134,900.

Princess-Steveville Syndicate 1, 2560-foot Bow Island sand discovery completed last summer which was placed on pump with an initial yield of 45 barrels daily, has now settled and is holding steady at 30 barrels. The oil tests 25.6 degrees. Well was flowed for a few weeks after completion, giving 15 to 20 barrels daily and was then shut in until mid-December. Regular deliveries are now being made to North Star Oil Ltd.'s refinery at Winnipeg, Manitoba. Price at the Denhart railway siding, 2 miles from the well, is $1.25 per barrel.

New markers are reported at 2 wildcats testing Anticlines east of Turner Valley, comparable to the Anticline established as productive at the 9947-foot Shell 4-24-J at Jumping Pound.

Royalite-New Valley 1, 2 miles east of North Turner Valley producers, has confirmed Cardium sand at 4620 feet and is below 4800 feet in Lower Benton, logging on schedule, with Madison lime objective looked for at about 10,000 feet.

Calling Valley Oils 1, joint operation of 9 independents 2 miles east of the Royalite-New Valley, has confirmed Belly River at 1560 feet, considerably shallower than first anticipated. Drilling is proceeding below 2600 feet, with Madison lime estimated at 8600 feet.

Standard Oil Company of California has staked the first of several new wildcat and extension tests in the Conrad area, scene of an important Ellis sand (Jurassic) strike in mid-1944. The new well, Conrad-Province 75-36C, is in lsd 12 36-4-15w4th, 7 miles south and east of the Conrad producing wells, 1½ miles south and east of the dry Conrad-Province 1, and 3 miles northwest of the dry Crow Indian Lake-Province 2.

The discovery, Conrad-Province 2, which pumped 14,591 barrels by November 30, is now pumping 115 barrels daily of 25.6-gravity oil. Conrad-Province 77-33B, ⅜ mile southeast, is now pumping 175 barrels daily. Recently completed Conrad-Province 55-33B, another ⅜ mile southeast, was starting a production test, and is expected to compare with the discovery well.

☆

MAJOR J. H. (HAL) GALLAWAY, for several years manager of the Wichita Falls office of Rinehart's Oil Report, was killed December 17 in Belgium. He had been in the sector only six weeks. A reserve officer in the regular army, Major Gallaway was a graduate of the University of Oklahoma and was an artillery expert. Before joining Rinehart's he was assistant to Claude Barrow, oil editor for the Daily Oklahoman at Oklahoma City.

FOR THE BEST IN CABLE TOOLS

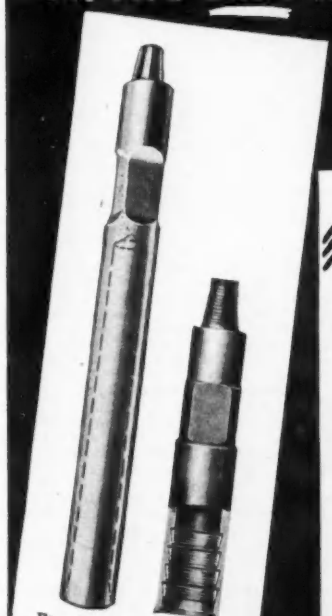

Fig. F476 Fig. F481

For the Close Hole Job
SPANG
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(Fig. F 476)
and MULTI-SLIP COLLAR SOCKET
(Fig. F 481)

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U. S. Exploratory Completions

ALABAMA WILDCAT

Choctaw County — Failure: Hunt Oil Co.'s J. C. Bolinger 1, c nw nw 33-10n-3w, abnd 5155 ft.

ARKANSAS WILDCAT

Union County—Failure: Root Pet. Co.'s McRae 1, c sw se 16-16s-18w, Smackover 6885 ft, abnd 6950 ft.

CALIFORNIA WILDCATS

Kern County—Failures: Tide Water's McBean 86-36, ne se 36-12-23, Maricopa area, abnd 11,026 ft.

Western Gulf's A-44-22, se nw 22-29-26, Rosedale area, Stevens 6582 ft, abnd 8825 ft.

Rothschild-Bender's Sheep Springs 4, se se 17-29-21, Sheep Springs area, Carnerous snd 3400 ft, abnd 3435 ft.

Harry H. Magee's Amalgamated-Happold 2, nw sw 15-25-24, Trico area, abnd 11,210 ft.

Sacramento County — Failure: Shell's Elk Grove 3-1, 9-7-6, abnd 1687 ft.

Ventura County—Failure: Wilshire Oil Co.'s Petit 2, nw ne 16-3-10, South Mountain area, abnd 5931 ft.

ILLINOIS WILDCATS

Cole County—Failure: H. V. Daugherty et al's Reinhart 1, se ne se 29-12n-8e, abnd 318 ft.

Fayette County—Failures: Magnolia's Wasnuth 1, nw se ne 24-5n-1e, abnd 2078 ft.

Paul Doran's Oldfield 1, ne ne nw 12-6n-1w, abnd 1691 ft.

Hamilton County—Discovery: Sinclair Wyoming's Russell 1, sw se sw 17-7s-5e, flow 425 bbls oil Aux Vases 3139-50, td 3150 ft.

Jasper County—Discovery: Texas Co.'s Huddleston 1, nw sw ne 13-6n-9e, pump 39 bbls McCl 2928-30, td 3022 ft.

Richland County — Discovery: Pure-Ohio's Koertge Cons. 1, ne ne nw 33-3n-10e, pump 149 bbls Rosi 3165-69, McCl 3194-99, td 3299 ft.

White County—Failure: C. E. Brehm et al's Miller 1, sw sw nw 26-4s-9e, abnd 3366 ft.

INDIANA WILDCATS

Perry County—Failure: Carl Michael's Tableman 1, se ne 28-6s-3w, abnd 870 ft.

Spencer County—Failure: Texas Co.'s Jochim 1, se ne se 3-4s-5w, abnd 1220 ft.

Sullivan County—Failure: Texas Co.'s Mahan 1, ne se se 9-9n-8w, abnd 2241 ft.

KANSAS WILDCATS

Barton County—Failure: Willis Hartman's Carroll 1, sec ne 2-20s-13w, Lans 3183 ft, Arb 3482 ft, abnd 3497 ft.

Brown County — Discovery: Clifton Gall's Livengood 1, ne nw sw 3-1s-15e, pump 85 bbls, 25 bbls wtr, Hunt 2578-2590 ft, td 2590 ft.

Cowley County—Failure: Grallup & McNish's Roberts 1, sw se nw 12-31s-3e, Arb 3328 ft, abnd 3334 ft.

Doniphan County — Failure: R. L. Ferguson's Boeh 1, se se sw 32-2s-22e, Miss 1479 ft, Hunt 1877 ft, abnd 2007 ft.

Marion County — Failure: Ward McGinnis' Stenzel 1, ne nw nw 10-19s-4e, Miss 2292 ft, abnd 2320 ft.

McPherson County—Failure: Delk Oil's Voth 1, sec sw 12-19s-1w, Miss 2872 ft, abnd 2917 ft.

Reno County—Failures: Plains Exploration's Paine 1, nec sw 26-23s-10w, Vi 2816 ft, Simp 3926 ft, Arb 3997 ft, abnd 4047 ft.

Skelly et al's Theis Est 1, sec nw 31-26s-4w, Arb 4134 ft, abnd 4150 ft.

Rice County—Failure: Phil Han's Brown 1, se se sw 9-21s-6w, Miss 3496 ft, abnd 3516 ft.

Russell County — Discovery: Harry Gore's Brack 1, sw sw ne 17-15s-12w, pump 89 bbls oil 25% wtr, Vi 3310-3313 ft, td 3303 ft.

KENTUCKY WILDCATS

Daviess County—Failures: Miller & Shiarella's Clayton Heirs 1, 19-O-27, abnd 1422 ft.

Barnett et al's Tyler 1, 23-O-30, abnd 1605 ft.

Hopkins County—Failure: Kent. Nat'l Gas' Brown Heirs 1, 12-J-21, abnd 1183 ft.

NORTH LOUISIANA WILDCAT

Richland Parish — Failure: C. W. Sharp's Cochran & Franklin 1, c nw se 41-17n-8e, gas rock 2955 ft, Glenrose 3106 ft, sso 3294-3303 ft, temp abnd 3450 ft.

SOUTH LOUISIANA WILDCATS

Cameron Parish—Failure: Phillips' Mermentau 1, c sw nw 17-14s-5w, Catfish Lake area, abnd 10,022 ft.

Livingston Parish—Failure: Louisiana Land Explor. Co.'s Livingston Lbr. Co. 1, start m/ely/cor sect 45 go n 32° w alg el sect 3300 th s 58° w 1980 to lcn in 45-7s-3e, abnd 9340 ft in sh and li.

Terrebonne Parish — Failure: Louisiana Ld. and Explor. Co.'s State-Pelican Lake Lse. 1, 706.5 s 4801 e of USCGS Triangulation Station "Pelican" T-23s-16e, abnd 12,457 ft.

MICHIGAN WILDCATS

Gratiot County—Failure: Sohio's Barnes 1, n½ ne nw 15-10n-4w, abnd 3210 ft.

Isabella County—Failure: Collin and Mark's Fedwa 1, sw nw sw 3-14n-5w, Dundee 3701 ft, abnd 3725 ft.

Lake County—Failure: Maguire's Thompson 1, s½ se se 24-18n-14w, Dundee 2935 ft, abnd 2942 ft.

MISSISSIPPI WILDCATS

Adams County—Failure: Humble's Mrs. Ida Stowers A-1, 9-8n-2w, elev 281 ft, 180 ft o&g cut mud 5955-71 ft, logged Cane River 3380 ft, Wilcox 3851 ft, Midway 7130 ft, Selma 8181 ft, Austin 8838-9128 ft, ssg 11,616 ft, abnd 12,010 ft.

Covington County — Failure: Freeport Sulphur Co.'s F. W. Watts 1, 20-6n-15w, elev 214 ft, abnd in Anhy 1808 ft.

Forrest County — Failure: Harry I. Morgan and D. H. Hager's U. S. of America 1, c sw nw 20-1s-12w, elev 301 ft, logged Wilcox 2650 ft, Midway 5010 ft, Chalk 5856 ft, Eutaw 7061 ft, base Marine Tuscaloosa 8070 ft, Massive 8350 ft, abnd 8549 ft.

Warren County—Failure: Magnolia's H. D. Ragsdale 1, 24-16n-4e, elev 274 ft, Wilcox 3275 ft, Midway 6003 ft, gas rock 6850 ft, Chalk 6854 ft, Tuscaloosa 7891 ft, Massive 8349 ft, L. Cret. 8910 ft, abnd 10,651 ft.

MISSOURI WILDCAT

Atchison County—Failure: Claude McQueen et al's Meyers 1, 25-64n-39w, abnd 1480 ft.

NEW MEXICO WILDCATS

Eddy County—Failures: A. J. Hardendorf et al's Riggs 1, nw ne se 7-20s-30e, elev 3297 ft, salt 395-1142 ft, lime 1180 ft, abnd 1605 ft.

Neil H. Wills et al's Wills 1-4, lot 14, 2970 ft nsl 1650 ft ewl 4-21s-24e, elev 3758 ft, abnd 1218 ft.

Lea County—Oil Discoveries: Continental et al's J. Skaggs 2-B-23, c sw nw 23-20s-37e, ¾-mi se Monument fld, nearest prod, 1st oil prod for state fr Wolf Camp (Abo), elev 3560 ft, base salt 2510 ft, San Andres 3990 ft, Glorietta 5200 ft, Tubb (Clear Fork) 6300 ft, Wolf Camp (Abo) 7685 ft, Pennsylvanian 7995 ft, Devonian 8200 ft, Montoya 9395 ft, Simpson 9775 ft, no Ellenburger, granite 10,430 ft, flow 269 bbls 42.3-gr sour oil, 150,000 gas, natural, via ¾-in, Wolf Camp (Abo) perf 7700-25 ft, td 10,465 ft.

Humble's Leonard-Government 1, c sw se 12-26s-37e, 8 mi n by w of Keystone-Ellenburger fld, Texas, nearest deep prod, elev 3012 ft, anhydrite 910 ft, salt 1115-2420 ft, brown li 2520 ft, Yates 2645 ft, White Horse-San Andres contact 3940 ft, San Angelo 5130 ft, Clear Fork 5390 ft, Devonian 7960 ft, Mississippi 9000 ft (est.), Silurian 9710 ft, Montoya 10,264 ft, Simpson 10,730 ft, Ellenburger 11,815 ft, flow 221 bbls 48.9-gr oil, 34% wtr, gor 1730/1, via 5/32-in, 1000 gals mud acid, 2500 gals acid Ellenburger perf 11,890-11,928 ft, td 11,969 ft in Ellenburger, pb 11,929 ft.

Lea County—Failure: Rowan Drilling Co.'s Simmons-Federal 1, c se se 18-10s-38e, elev 3919 ft, anhydrite 2300 ft, salt 2415-2674 ft, Yates sd 3000 ft, Yates grains 3020 ft, li 4250 ft, abnd 5237 ft.

OKLAHOMA WILDCATS

Caddo County—Failure: Texas Co.'s Brown 1, ne sw sw 18-5n-11w, Hunt 2625 ft, abnd 2951 ft.

Cleveland County—Failure: Carter's Lamar Ranch 1, c ne sw 28-8n-3w, abnd 10,884 ft.

Lincoln County—Discovery: J. W. Sorrels' Sukovaty 1, sw sw se 15-14n-3e, flow 25 bbls, 5% wtr, 42-gr, perf 50 shots 4003-15 ft, td 4043 ft.

Lincoln County—Failure: Herndon et al's Honeycut 1, se se nw 9-13n-3e, Hunt 5025 ft, Vi 5175 ft, 1st Wx 5253 ft, 2nd Wx 5325 ft, abnd 5338 ft.

Love County—Failure: Gulf's Benson 1, nw sw 29-7s-3w, abnd 4832 ft.

Okfuskee County—Failure: J. Hall's Ahrens 1, nw ne 32-10n-12e, abnd 1650 ft.

Okmulgee County — Failure: Barclay-Morgan's Hope 1, nw ne nw 22-11n-13e, Booch 1577 ft, abnd 1593 ft.

Osage County — Failure: Sinclair Prairie's Osage 1, ne ne se 31-25n-6e, chat 2902 ft, abnd 2914 ft.

Pawnee County — Failure: Richard Hughes' Koller 1, nw se 34-22n-3e, Miss 3999 ft, 1st Wx 4319 ft, 2nd Wx 4343 ft, abnd 4357 ft.

WEST TEXAS WILDCATS

Borden County—Failure: Texas Co.'s W. D. Johnson 1, c nw nw T&P Ry. 41, blk 32, T-4-N, elev 2551 ft, anhydrite 1130 ft, Yates 1700 ft, San Andres 3030 ft, abnd 7540 ft.

Cochran County — Failure: Helmerich & Payne's D. S. Wright 1, 660 ft out nec labor 1, Lge 95, Mills CSL sur, abnd 6521 ft.

Ector County — Oil Discovery: Shell-Cities Service's T. P. Land Trust 1, 664 ft nsl 667 ft wel T&P Ry. 7, blk 45, T-1-S, 3⅞ miles nw Wheeler-Ellenburger fld, nearest and 1st Pre-Permian prod for county, elev 3339 ft, anhydrite 1530 ft, Yates 2790 ft, San Andres 4130 ft, San Angelo 5170 ft, Clear Fork 5500 ft, Wichita-Albany 5600 ft, Devonian 7860 ft, Silurian 8830 ft, Simpson 9100 ft, Ellenburger 9980 ft, flow 1911 bbls 41-gr oil, gor 837/1,

½-in, 1000 gals acid Devonian perf 7886-8020 ft, td 10,081 ft, pb 8050 ft.

Gaines County—Failures: Rowan Dr. Co.'s Schumacher 1, 510 ft out swc labor 2, lge 298, Reagan CSL sur, elev 3048 ft, anhydrite 2193 ft, salt 2256-2763 ft, brown lime 4430 ft, San Andres 5205 ft, abnd 5555 ft.

Shell's Sparks 1, c nw ne PSL sec 3, blk A-13, elev 3422 ft, anhydrite 1795 ft, Yates 2980 ft, San Andres 4490 ft, Devonian estimated 9980 ft, abnd 10,604 ft.

Howard County—Failure: Herman & Geo. Brown-J. C. Karcher's Caldwell B-1, 890 ft snl 330 ft ewl ne¼ T&P Ry. sec 32, blk 32, T-3-N, elev 2639 ft, lime 2920 ft, San Andres 3170 ft, abnd 6700 ft.

Pecos County — Failure: Cardinal Oil Co.'s Lowrey-Wilson 2-A, 1010 ft nsl 990 ft ewl T. C. Ry. sec 20, blk Z, elev 2681 ft, anhydrite 780 ft, abnd 1880 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Oil Discovery: Texas Co.'s M. A. McCright 1, 3500 ft nsl 330 ft wel of Stephens Scallorn sur 280, elev 1892 ft, Noodle lime 2517 ft, pump 44 bbls oil, 4 bbls wtr, 2500 gals acid Noodle perf 2536½-46½, 2518-23 ft, td 3210 ft in Swastika, pb 2554 ft.

Jones County—Failure: T. D. Humphrey & Burton's Culwell 1, nw nw sw sec 47, Deaf & Dumb Asylum Lands sur, elev 1612 ft, Dothan 1677 ft, Noodle 1770 ft, Saddle Creek 2025 ft, Flippen 2095 ft, King sand 2405 ft, Swastika 2475 ft, Palo Pinto 3659 ft, abnd 3687 ft.

WEST CENTRAL TEXAS NEW PAY TEST

Stephens County — Leeray Field Deep Oil Discovery: Woodley Pet. Co.'s G. W. Thorpe 1-B, 467 ft out swc ne sect 456, S. P. Ry. sur, elev 1484 ft, Bend li 3538 ft, Mississippi 3745 ft, Ellenburger 3974 ft, flow 45 bbls 40.7-gr oil, 40% wtr, natural via 2-in fr Mississippi perf 3745-3820 ft, td 3990 ft.

SOUTH CENTRAL TEXAS WILDCATS

Bastrop County—Failure: Federal Royalties Co.'s E. E. Barnett 1, start nwly cor 150.9-ac lse, L. C. Cunningham sur, go se alg swl 2196 ft, th ne at ra 330, Serp 1603 ft, Austin 1609 ft, abnd 1660 ft.

Gonzales County — Failure: Danciger O&R Co.'s H. S. Weber 1, 1980 ft sel 330 fr nel 419.5-ac lse, Geo. W. Petty sur, abnd 4217 ft.

SOUTHWEST TEXAS WILDCATS

Duval County — Failure: J. W. Gorman, Parker and McCune's Juan Carillo 1, 330 fr sl 3557 fr wl 296-ac lse, Marcello Hinojosa Gr sh 40, abnd 4695 ft.

Duval County—Oil Discovery: Tom Graham's M. I. Richardson 1, 660 fr sl 1650 fr wl 2200-ac lse, GB&CNG sur 3, elev 767 ft, sd 1780 ft, perf 41 shots 1780-94 ft, pump 20.37 bbls 18-gr oil, 20% wtr, td 2957 ft.

Starr County—Gas Discovery: George Irving's M. M. Garcia 1, 1650 fr sl 330 fr el tr 215, porc 90 140-ac lse, elev 336.5 ft, perf 24 shots 3288-92 ft, flow 57 mln wet gas, ⅛-in, td 3520 ft.

Webb County—Failure: Dulup Oil Co.'s Bruni 5, 330 fr w&nl blk 74, 640-ac lse, Albercas Gr, Brown subdvn, abnd 1646 ft.

LOWER TEXAS COAST WILDCATS

Bee County—Failure: W. Earl Rowe's O. H. Wolters 1, 270 w 660 s of upper nec of Wolters 1099-ac lse, also w cor J. G. Rountree sur, 1230 fr nl 1200 fr swl F. O. Skidmore sur, Vicksburg 4036 ft, abnd 4437 ft.

Goliad County—Failure: Lewis Lawlor's J. G. Swickheimer 1, 467 fr s&wl nw 40-ac of blk 22, Guadrilla Irrig. Co. sur, abnd 4850 ft.

Jackson County—Failure: Navidad Co.'s F. Westhoff 1, 467 fr nl 2173 fr wl Thos. Menefee sur A-52, 40-ac lse, abnd 7505 ft.

Karnes County—Failure: Lewis Lawlor's Gus A. Johnson 1, 467 fr s&wl 150-ac lse, Carlos Martinez Gr 1, elev 410 ft, abnd 6250 ft.

Nueces County—Failure: Blanco Oil Co. and Al Buchanan's Luling Foundation 1, 330 fr swl 1650 fr sel sect 161, 156.1-ac lse, F. Z. Bishop subdvn of Palo Alto Gr, 4 ft oil sd 7055 ft, abnd 7513 ft.

San Patricio County — Failure: Mikton Oil Co.'s A. H. Masiran 1, 1330 fr el 1420 fr el 2215 fr nl n 200-ac lse, abnd 6729 ft.

LOWER TEXAS COAST NEW PAY TEST

Brooks County—Kelsey Deep Oil Discovery: Shell's Guaranty State Bnk 2, 1980 fr el 660 fr sl GC&SF sur 721 and 640-ac lse, 3600 n of Kelsey fld prod, 2177 e of No. 1, elev 235 ft df, sd 6395 ft, open hole comp, flow 205.57 bbls 45.3-gr, 9/64-in, td 6407 ft.

TEXAS GULF COAST WILDCATS

Chambers County—Oil Discovery: Humble's M. E. Mayes 1, 4000 fr el 330 fr sl W. Bryan sur A-64, 640-ac tr out of 4173-ac lse, sd 8166 ft, separated fr gas well by fault, perf 15 shots 8166-69 ft, flow 752 bbls 41.8-gr oil, 0.2% wtr, td 9994 ft.

Chambers County—Failure: Texas Co.'s J. T. White et al 1, 466 fr s&wl sect 137 685.7-ac lse, T&NO sur A-295, td 9520 ft.

Wharton County—Gas Discovery: Texas Co.'s C. D. Bergstrom et al 1, (OWDD) 660 fr nl 1980 fr el sect 37 320-ac lse, WCRR sur A-363, elev 100.6 ft, otd 4510 ft, deepened 5286 ft, pb 4132 ft, perf 24 shots 4122-28 ft, flow est. 8 mln gas.

TEXAS GULF COAST NEW PAY TESTS

Montgomery County—Conroe Wilcox Failure: G. W. Strake's P. G. Korhn W-1, 66 fr e&sl B lse 660 fr sl S. H. Bryan sur, w sw flk, gas odor below 9587 ft, Wilcox 8010 ft, td 12,020 ft.

Wharton County—Dubavol New Pay Discovery: Sinclair Prairie's Stovall 1, nwc se¼ sect 72, John Bagnal A-495 660 fr n&wl se ¼ sect 72, e offset Amerada disc well, elev 97 ft, dual comp, new sd 5497 ft, perf 32 shots 5550-58 ft, gas well, no gge; new sd reperf 32 shots 5498-5506 ft, flow 147 bbls 27-gr, 9/64-in, td 7312 ft.

Wharton County — Hillje Oil Discovery: Texas Co.'s Emily A. Weatherer 2, 660 fr s&wl sect 100 L. P. Ogden sur A-535, 640-ac lse, elev 76.6 ft, perf 21 shots 6538-44 ft, flow 52.18 bbls 46-gr oil, 0.2% wtr, ⅛-in, csg sld, td 7500 ft.

EAST TEXAS WILDCATS

Camp County—Failure: Harry S. Moss et

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OIL AND GAS FIELD MAP
of
NORTH LOUISIANA, MISSISSIPPI, SOUTH ARKANSAS, EAST TEXAS AND WEST ALABAMA

Showing county, county seat, oil, gas and condensate fields with their names; discovery date, gravity of production and name, age and producing formation; also the size and ownership of all oil and gas trunk lines traversing this area. Hand colored, green, red, and yellow.

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■ Wanted by a consulting geophysical organization, Petroleum Engineers with Hayward Mudlogging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 36, c/o The Oil Weekly, Houston, Texas.

SITUATION WANTED

Drilling Superintendent, now working, would like to contact an individual or company who has drilling rigs and would like to make a deal for some one to look after them for an interest. The reason for wanting to change is to go into business for myself. I have had sixteen years experience with drilling contractors and can furnish the very best of references. Address: Box 47, c/o The Oil Weekly, Houston, Texas.

■ Petroleum engineer, graduate with 15 years experience in all branches of production, including field operations, development, valuation, government regulations and research, interested in responsible position with opportunity for improvement. Address: Box 46, c/o The Oil Weekly, Houston, Texas.

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New Orleans 12, Louisiana

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■ WANTED TO BUY: Swab-unit and truck complete with tools and lines located near East Texas Field. Prefer Ford or Chevrolet with bed, winch, ginpoles. Box 128, Longview, Texas.

NOTICES

■ CAPITAL SEEKERS—Interested in raising $25,000 or more for a postwar project should write to AMSTER LEONARD, Fox Bldg., Detroit 1, Mich.

■ Experienced Independent Operator desires to contact ample capital for drilling meritorious blocks. Details upon request. Box 111, c/o The Oil Weekly, Houston 1, Texas.

al's Brison-Counts 1, 1180 ft wel, 660 ft snl of Robt. Wyres sur, 2-1/3 mi e of Pittsburg fld, elev 412 ft, Pecan 2530 ft, Blossom 3240 ft, Ector 3875-95 ft, Woodbine 4165 ft, Georgetown 4640 ft, Paluxy 5771 ft, Glen Rose 6154 ft, massive anhy 7334-7530 ft, Pittsburg zone 8165 ft, abnd 8275 ft.

Van Zandt County—Discoveries: Humble's Bruce 1, 3400 ft fr nel, 3800 ft fr sel J. Saligna sur, 4 mi s Edgwood, elev 510 ft, Pecan 2347 ft, Austin 3380-3831 ft, Woodbine 4350 ft, Georgetown 5154 ft, Paluxy 6278 ft, Glen Rose 6606 ft, massive anhy 7628-7816 ft, Rodessa 7875 ft, Pettit 8420 ft, Travis Peak 8505 ft, pump 88 bbls 37.4-gr oil natural fr Travis Peak perf 8524-44 ft, td 8904 ft, pb 8560 ft.

Texas Co.'s J. F. Stout 1, 660 ft out nwc 169-ac lse, or 3050 ft ne of swl 1600 ft se of nwls N. T. Dickerson sur, 2500 ft n by w of its 9116-ft failure, elev 557 ft, Pecan 2498 ft, Austin 3450-3915 ft, Woodbine 4384 ft, Buda 5178 ft, Paluxy 6349 ft, Glen Rose 6614 ft, massive anhy 7655-7827 ft, flow 25 bbls 44-gr oil, 11 bbls wtr, gor 2100/1, natural via 7/64-in fr Rodessa open hole 8150-57½ ft, td 8161 ft, pb 8157½ ft.

EAST TEXAS BORDER COUNTY WILDCAT

Angelina County—Failure: Humble's Angelina Lumber Co, 1, 550 e 130 w m/nly/nwc W. H. Herring sur but in Wood sur, elev 304 ft, Carrizo 1192 ft, Midway 4303 ft, Pecan Gap chalk 5870-6228 ft, Austin chalk 6632-42 ft, Woodbine 6942 ft, Comanche li 7110 ft, abnd 7212 ft.

WYOMING WILDCAT

Fremont County—Discovery: Sinclair's Unit 1, sw nw nw 14-32n-95w, flow 804 bbls, ¾-in tbg choke, top Tensleep 7281 ft, td 7593 ft.

WESTERN CANADA WILDCATS

Jumping Pound—Discovery: Shell of Canada's No. 4-24-J, lsd 4 24-25-5w5th, 8500 gals acid, flow 13,500,000 gas, 100 bbls 46.5° to 52.0° API crude, td 329 ft in Madison li at 9947 ft.

Highwood — Failure: Transcontinent Oil Co.'s No. 1, lsd 4 36-18-3w5th, abnd 299 ft in Madison li at 3333 ft, test 24 bbls wtr and ½ bbl light crude in 10 ft zone.

Conrad—Failure: California-Standard Co.'s Conrad-Province No. 55-21B, lsd 11 21-5-15w 4th, abnd.

NORTH TEXAS WILDCATS

Archer County—Failures: A. R. Dillard et al's Herndon 2, 1773 ft nsl 2386 ft ewl S. P. Ry. sec 1, A-434, abnd 1650 ft.

S. D. Johnson et al's McGregor 1, 450 ft snl 150 ft ewl of e½ sec 7, Brazos CSL sur, abnd 901 ft.

D. H. Bolin et al's Abercrombie 1-J, 750 ft s 150 ft e of m/w/nw cor S. Abercrombie sur A-752, abnd 1377 ft.

King County—Oil Discovery: Ohio's W. R. Ross 1, 1980 ft snl 330 ft ewl sect 24, R. B. Masterson sur, A-1163, 9¼ mi e by s Bateman fld, elev 1727 ft, flow 305.7 bbls 36.4-gr, gor 800/1, natural in 4 hrs via ½-in, Strawn 5236-57 ft.

Wichita County—Failure: Akin-Dimock et al's Foster 1, 950 ft snl 1350 ft wel sect 1, SA&MG Ry. A-272, abnd 2103 ft.

NORTH TEXAS NEW PAY TEST

Cooke County—Sivells Bend Deeper Pay Discovery: Texas Co.'s I. Beasley 1, 660 ft snl 665 ft wel 200-ac lse, or 7020 ft nsl 1920 ft wel of J. McKerley sur A-939, ⅞-mi w by s of 6755-63 foot disc, elev 823 ft, flow 416 bbls 43.6-gr natural via ½-in, tp 1120-35 lbs, cp 1150-235 lbs, Strawn perf 6817-63 ft, td 6904 ft,

Drilling Halted

With hole made to 11,868 feet, drilling operations were suspended for the winter at Socony-Cities Service Hillsborough 1 well, on December 24. Location is near the middle of Hillsborough Bay, Prince Edward Island, Nova Scotia.

To Fix Quotas

Production quotas for wells producing from the Bartlesville zone in the West Edmond pool, Central Oklahoma, will be fixed by Oklahoma State Corporation Commission this month. There are 6 producers from the Bartlesville sand and the wells are located along a buried river bed or fault following the south lines of townships 14n-4w and 14n-5w, in Oklahoma and Canadian Counties. Cities Service Oil Company has a gasser in the Bartlesville zone in Logan County which is estimated good for 5,000,000 cubic feet of gas and 200 barrels of distillate per day. It has been classified as a gas well and will be permitted to produce 25 percent of its potential.

United States Wildcat Starts

ARKANSAS

Union County: C. H. Murphy, Jr.'s C. H. Murphy 1, 660 w 531 s nec 4-19s-15w, lcn Smackover lime test.

CALIFORNIA

Fresno County: Jacalitos Oil Co.'s 1, sw ne 30-21-16, Jacalitos area, lcn.

Kern County: Continental's K.C.L.-K1, se ne 36-11-20, Wheeler Ridge area, lcn.

Los Angeles County: Asso. Piping & Engineering's Simmons 1, se 1-3-11, Coyote area, lcn.

Santa Barbara County: Shell's Dreyfus 1, sw 8-4-29, Naples area, lcn.

Tulare County: Shell's Parsons 36-1, ne sw 1-23-25, Pixley area, lcn.

ILLINOIS

Fayette County: S. H. Leavitt's Fundaburke 1, nw sw se 19-8n-1e, lcn.

INDIANA

Posey County: Cherry & Kidd's Gray 1, nw nw ne 2-8s-15w, lcn.

KANSAS

Jackson County: Dan McLaughlin Dev. Co.'s Allan 1, nw nw ne 32-8s-16e, sd td 285 ft.

Sedgwick County: Branine & Holl's Tjaden 1, sec nw 34-29s-2w, dr 260 ft.

Trego County: Harbar et al's Cotton 1, sw sw ne 15-12s-21w, mim.

Woodson County: Ira Nourse et al's Ladd 1, sw ne sw 27-26s-17e, dr 1630 ft.

NORTH LOUISIANA

Richland Parish: Rogers Lacy's B. May 1, c sw nw 26-17n-9e, lcn 3500-ft test.

MICHIGAN

Allegan County: Geo. L. Koop's Koeman 1, nw nw sw 18-4n-15w, lcn.

Kent County: Oil Producer's Apsey 1, ne se ne 8-5n-11w, rig.

Mecosta County: Pure's Meyer 1, nw nw sw 30-14n-10w, dr.

Smith's Ortwein 1, se nw ne 7-14n-7w, dr.

Oceana County: Fisher-McCall's Bahr 1, nw nw ne 6-16n-16w, rig.

Osceola County: Fisher-McCall's Cool 1, s½ se sw 5-19n-10w, rig.

MISSISSIPPI

Jefferson County: Humble's M. R. Smith 1, c nw se 12-9n-1e, lcn Tuscaloosa test.

Tate County: C. Porter Johnson's B. F. Pritchard Estate 1, 330 fr n&el nw 28-4s-7w, lcn Paleozoic test.

MISSOURI

Nodaway County: Claude McQueen's Patterson 1, nwc ne 14-64n-38w, dr 1090 ft.

NEW MEXICO

Eddy County: Forrest H. Lindsay et al's Forrest Lee 1, nw ne sw 12-19s-26e, lcn 2000-ft test.

OKLAHOMA

Cleveland County: British American's Hansmeyer A-1, ne nw nw 14-9n-2w, c&p.

Cotton County: J. M. Jackson's English 1, sw sw se 12-2s-11w, dr 1057 ft.

Hughes County: Mid-Continent's Meadors 1, se sw nw 20-9n-11e, rur.

Lincoln County: Morgan Oil et al's Garrett 1, nw nw nw 34-16n-4e, rur.

Logan County: Amerada's Dodd 1, se nw nw 31-18n-4w, rur.

Okfuskee County: Amerada's Barry 1, ne ne sw 23-10n-10e, lcn.

Seminole County: Schermerhorn Oil's Kouri 1, sw nw ne 13-10n-7e, lcn.

Mealy-Wolf's Cone 1, ne sw 11-7n-5e, lcn.

Stephens County: T. H. McCasland's Brown 1, nw sw se 23-1n-9w, mit.

Waggo Oil's Johns 1, ne ne ne 11-2s-9w, dr 227 ft.

WEST TEXAS

Borden County: Richfield Oil Corp.'s J. O. Dodson 1, c se ne H&TC Ry. 579, blk 97, lcn 3500-ft rotary test.

Crockett County: Watchorn O&G Co.'s G. L. Thompson 3, 990 ft out sec I&GN Ry. sec 73, blk 1, mim for 1500-ft cable test.

Howard County: Cosden Pet. Corp.'s W. R. Read 1-A-40, ne ne ne T&P Ry. 40, blk 30, T-1-N, lcn 4500-ft cable test.

Lubbock County: The Norwalk Co.'s Emma O'Brien 1, c ne se HE&WT Ry. sec 12, blk D-2, lcn 6000-ft Clear Fork test.

Runnels County: Hunter & Hunter et al's J. T. Brandon 1, 330 ft out nwc se sect 124, S. J. Lewis sur, 1⅛ mi se 4670-ft Ellenburger failure, lcn rotary test.

Upton County: Humble's Mrs. W. E. Gresham 1, 1980 ft nsl, 660 ft wel sec 2, Indianola Ry. sur, lcn 7600-ft Clear Fork test.

Winkler County: Gulf's Keystone 8-E, Keystone-Ellenburger fld extension, sw sw sw PSL 13, blk B-2, 2¼ mi se of nearest Ellenburger prod, deepening fr 4463 ft to 10,000 ft.

WEST CENTRAL TEXAS

McCulloch County: Geo. W. McClung et al's Delia Crawford 1, 330 ft out sec of e½ sect 1371, H. Spiller sur, lcn 2500-ft cable test.

SOUTH CENTRAL TEXAS

Bastrop County: Federal Royalties Co.'s Andy Alexander 1, 1586 ft fr nel 660 fr nwl Jesse Billingsley surm 124-ac lse, dr 1600 ft.

SOUTHWEST TEXAS

Duval County: M. M. Miller & Sons' George Herbarger km 2019 fr wl 1155 fr sl blk 26, 336 fr el of 160-ac lse, lcn 6000-ft test.

Starr County: George Irving's Sugarland Industries 1, 447 fr wl 1420 fr nl 200-ac lse, porc 91, part of sj B-1, 12 mi ne Rio Grande City elev est 338 ft, ru.

Webb County: Dulup Oil Co.'s Bruni 6, 330 fr n&el blk 74, 640-ac lse, Albercas Gr, Brown subdvn, elev 835 ft, lcn 1700-ft test.

LOWER TEXAS COAST

Brooks County: Sun's D. J. Sullivan et al 5, 467 fr wl 15,753-ac lse, Loma Blanco Gr, 1616 nw No. 2, 12,800 fr sl lse, elev 87 ft, lcn 10,000-ft test.

Jackson County: Stewarts' A. E. Westhoff et al 1, 660 fr el 467 fr sl 120-ac lse, Jos. Rector Lge, elev 71 ft, lcn 6600-ft test.

San Patricio County: Henshaw Bros.-Coastal Refineries' Florence B. Haworth 1, 330 fr se&swl 129.2-ac lse, Cubbage & Miller subdvn of O'Conner Rch, sect 30, lcn 7000-ft test.

TEXAS GULF COAST

Brazoria County: M. S. Hammonds' F. A. Brock, Jr., 1, 400 fr sl 330 fr el, 250-ac lse, J. E. Groce 5-Lge gr, elev 20 ft, lcn 1500-ft test.

EAST TEXAS

Cherokee County: Humble's H. W. Walker 1, 660 ft snl 1000 ft wel of 214.04-ac lse and John Jordan sur, 7200 ft n by e of its Larissa pool disc, rur for 11,000-ft test.

Houston County: Keith Railway Equipment Co.'s Leo Knox 1, 450 ft fr nwl 367 ft fr ne 249.8-ac tr, Omy Weir sur A-93, or 1225 ft fr sl of W. Prissick sur, 450 ft fr ne of Weir sur, lcn 5000-ft Midway test.

Hunt County: Ohio Oil Co.'s Valerie Popper 1, 1936 ft wel 660 ft fr m/n/sl of 286.39-ac lse, or 1461 ft snl 1936 ft wel O. M. Roberts sur 21, mim for 10,000-ft Smackover lime test.

NORTH TEXAS

Archer County: S. D. Johnson et al's A. B. Edwards 1, ne sw sw sec 37, Madison CSL sur, A-268, lcn 6000-ft Ellenburger test.

Clay County: Consolidated Oil Co.-Premier Oil Ref. Co.'s Mrs. Cora Brixey 1, 330 ft out sec blk 38, J. H. Belcher subdiv, 1⅛ mi s Deer Creek, lcn 6000-ft Ellenburger test.

Cooke County: Benson Bros. et al's Herman Dangelmayr 1, 931 ft ewl 1035 ft snl of lot 6, Francis Hughes sur A-439, lcn 3500-ft rotary test.

G. E. Kadane & Sons' E. J. Coursey 1, 330 ft fr swl 330 ft ewl of e 107.6-ac of W. F. Shaw sur A-1307, lcn.

Phillips' J. Gregory "Bentley" 1, 2562 ft wel 2375 ft nsl of Geo. G. Steele-Toby sur A-1062, lcn 2300-ft test.

King County: Humble's L. K. Johnson 1, 990 ft nsl 660 ft wel sec 44, F. P. Knott sur A-898, lcn 7000-ft rotary Ellenburger test.

WESTERN CANADA

Conrad: California-Standard Co.'s Conrad-Province 75-36C, se lsd 12 36-4-15w4th, ru.

Drake Memorial Curator To Make Tulsa Address

Dr. Paul H. Giddens, Curator of Drake Well Memorial Park and Museum, Titusville, Pennsylvania, will address oil men January 16 in Tulsa.

Giddens, author of numerous articles and books on early American oil industry, will speak on "The Beginning of the Petroleum Industry." He will be introduced by Judge James A. Veasey of Ann Arbor, Michigan, retired general counsel of The Carter Oil Company and life member of the Kansas-Oklahoma Division, Mid-Continent Oil & Gas Association, the executive committee of which arranged Dr. Giddens' appearance.

Squeaks from the Bull Wheel

Indelible Delight

A clever girl
Is Dotty Dome
She paints her lips
With mercurochrome

The Kindly Heart

Pfc.: "I hear that nine sergeants and a private were hurt in a wreck."
Pvt.: "Poor fellow."

Or Maybe Empty-Headed

A fat lady stepped on some inaccurate scales and the needle halted at 75.
"My gosh!" exclaimed a bystander. "She's hollow!"

He Had One Choice

"I married a man in the village fire department."
"A volunteer?"
"Naw, pa made him."

Robinson Caresso

"I was shipwrecked for six months on a desert island with a beautiful blond."
"What did you do for food?"
"I don't remember."

Messing Around, Maybe

Captain: "Some of the best cooks in the world are in our army."
Private: "What are they doing, sir?"

The Only Answer

"Gee, Mary, you never kissed me like this before. Is it because we're in a blackout?"
"No, it's because my name isn't Mary."

Practically Well

"And how is the patient this morning, nurse?"
"Much better, doctor. A minute ago he was trying to blow the foam off his medicine."

She Scotched Him

"I can't understand why you scratched that wonderful man off your list. Gee, think of those smiling Irish eyes, that Grecian nose, that Viking physique."
"Yeah, but don't forget those Roman hands."

Mother Goose—and Why

There was an old woman
Who lived in a shoe.
She had so many children
She didn't know what to do.
(Obviously.)

This Curious World

A certain musician has traded his violin for a piano because a glass of beer won't stand on a violin.

Just because a man is polished doesn't mean he has a clean mind.

Tight sweaters improve a girl's circulation.

The customer is always tight, says a sign in a beer joint.

Definitions

Strip tease artist: A girl who looks good in everything she takes off.

Alimony: A man's cash surrender value.

Man: A large animal who is always looking for home atmosphere in a hotel and hotel service around the house.

Business conference: A group of men who individually can do nothing, but collectively can decide that nothing can be done.

Europe: A collection of countries with chips on their shoulders and none on the table.

Poet's Nook

Now look, little beauty, I think it's
my duty
To tell you this stalemate can't last;
My liberty's fleeting and I'm over-
heating,
My blood pressure is rising—but fast.

I've said all I'm gonna of Buna
and Gona
I've showed you my ribbons and
scars;
I've subsidized taxies from Reuben's
to Maxie's,
I've taken you around to the bars.

Your sweet pouting lips entice
me, lassie,
So let's not encumber the plot
With doubtful equasions and petty
evasions—
Areyougonnakissmeor . . . NOT?

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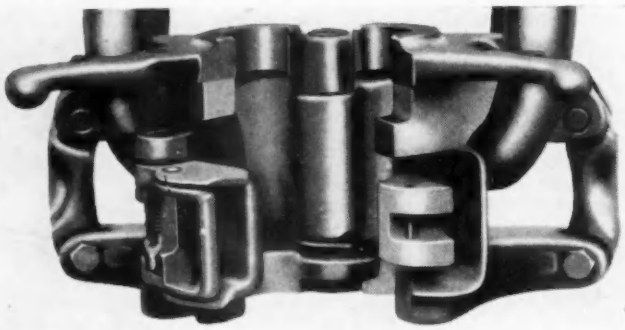
Notes for the Equipment Buyer and User

Improved Safety Elevator
BYRON JACKSON COMPANY

Byron Jackson Company, P. O. Box 2017, Terminal Annex, Los Angeles 54, announces an improved elevator for field service. In addition to the safety latch, the new type AA elevator has a cam and roller spreading device that holds the elevator open against the normal closing action of the links.

With this new feature, the elevator arrives at the fourble board in level operation position. The usual impact of the drill pipe of an easy quick pull frees the spreading cam and allows the elevator to swing closed.

Material of the elevator is heat-treated, high alloy steel. The top bore is flame hardened to guard against upsetting. The safety factor is rated four to one, 300 tons.



Byron Jackson Elevator

Permanent Houston Office Located by Pressure Weld

Pressure Weld Company, with headquarters in El Paso, has located a permanent office in the Niels Esperson Building, Houston. The office was established early in 1944 in order to facilitate welding the Texas section of the Tennessee Gas and Transmission Company's line to the east, but it was not decided to keep the office in Houston until recently.

A. L. Forbes, vice president and general manager, is in charge of the office. He formerly was general superintendent of El Paso Natural Gas Company, owner of Pressure Weld Company. He will retain his general connection with the parent company, but will devote most of his time to the Houston office of Pressure Weld Company.

Foxborough Company Names District Manager at Tulsa

The Foxboro Company, Foxboro, Massauchetts, announces that Wendell A. Melton has been appointed district manager in charge of the Tulsa territory with offices in the McBirney Building, Tulsa 3.

Following his return from France at the end of the first World War, Melton became a construction and operating engineer serving oil and gas companies, and later was a consulting engineer, specializing in oil and gas work. In 1936 he was appointed business manager for the board of education of Tulsa, and held the position until he joined Foxboro.

Wins Fourth Star

Chain Belt Company, Milwaukee, Wisconsin, has been awarded the fourth star to add to the Army-Navy E pennant for outstanding production of wartime equipment. The company received its original Army-Navy E in 1942.

Worthington President and Vice President Elected

Worthington Pump and Machinery Corporation, Harrison, New Jersey, announces election of Clarence E. Searle as president and Hobart C. Ramsey as executive vice president. Searle was formerly vice president in charge of

H. C. Ramsey

C. E. Searle

sales, and Ramsey was vice president in charge of operations.

Searle succeeds Harry C. Beaver, who was elected chairman of the board of directors and management committee.

Succeeding Searle as vice president in charge of sales is Edwin J. Schwanhausser, who was vice president in charge of manufacturing and sales operations in the Buffalo, New York, district.

Leslie C. Rickets, manager of the Harrison Works, was also elected a vice president.

Rates and Rules Digests

National Petroleum Association, 930 Munsey Building, Washington 4, D. C., has announced publication of digests of crude oil rates and rules, and rates and rules on gasoline and other products.

Information in these digests includes all rates and regulations of all common carriers by interstate pipe lines on file with the Interstate Commerce Commission. All stations are named, with origin and destination, and an index is provided.

Hook Swaged to Cable
POULSEN & NARDON

Poulsen & Nardon, Terminal Box 2398, Los Angeles 54, is marketing a new direct-line swaged hook. The hook is said to be the first swaged to the cable.

The hook has a straight shank and is made from alloy steel in a precision stamping operation. It is designed so that the load is on a direct line from the cable. Other features of the hook include flattened sides, smooth inside surface, round throat, ample radius and finished point.

General Electric Appoints Laboratory Supervisor

General Electric Company, Schenectady, New York, announced that David C. Prince, vice president, will take charge of the company's General Engineering Laboratory, activities of which will be broadened to include the requirements of the entire company.

A graduate of the University of Illinois in 1912, Prince's service with G.E. has been continuous except for five years beginning in 1914 which he spent with Illinois Public Utilities Commission and as an officer in World War I. He was for several years associated with Dr. E. F. W. Alexanderson, famous radio pioneer. He is a past president of American Institute of Electrical Engineers.

Expanded Line of Catheads Offered by MacClatchie

MacClatchie Manufacturing Company, Compton, California, is producing an expanded line of catheads.

The catheads are available in three models with gear ratio ranging from 2.77 to 1 to 3.45 to 1. The Junior model is designed to take line shafts up to 3½ inches. Model E Senior accommodates line shafts up to 5 inches, and the heavy duty Model HD will handle the largest shafts.

Heavy duty gear units are now used in all the catheads. With these units power is increased from two to four times, and the speed of the breaking sheave is reduced accordingly. This feature is said to be especially desirable for modern high-speed drilling equipment since it permits the breaking of the tightest tool joints without damage to tongs, tong dies, pipe or other equipment.

Diffraction Booklet Issued

North American Philips Company, Inc., 100 East 42nd Street, New York, has published a 12-page booklet describing X-ray diffraction techniques and applications. Diagrams, typical diffraction films, and several tabulations are to show how X-ray diffraction equipment is used for identification, research and production. This apparatus is used for identifying, comparing and analyzing materials of all kinds.

Traveling block sheaves cast from molybdenum steel are strong, tough and wear-resistant.

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Today with war sources getting the major part of our rope output, we at New Bedford offer our customers advice on how to get maximum service from the available supply. And just as we make good rope, we try to give good advice—practical down-to-earth hints on how you can get the most service life from the rope you have.

THEY'RE IN THIS BOOKLET

entitled "Care and Conservation of Rope" which will be sent you on request. It contains directions on how to use... how to splice... strength tables for different sizes and weights. Write for your copy.

7714

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Vacuum Pump

MARCO COMPANY

Marco Company, Incorporated, 511 Monroe Street, Wilmington 17, Delaware, is offering a positive displacement, constant volume, high vacuum pump. The pump was designed to meet exacting requirements of pumping materials being processed. It is claimed that the pump, The Flow-Master, will transfer, meter or proportion any product that can be pumped, maintaining a steady, non-pulsating delivery, positive displacement, and high vacuum.

The pump is constructed of a stainless metal combination. The pump can be disassembled, cleaned and reassembled within a few minutes. No threads are exposed to the product. No pockets exist in which material might become lodged, and products being pumped are not subjected to mechanical friction or discoloration.

Wear is controlled automatically. Parts are interchangeable. Rotors are hydraulically balanced. Seals are automatic. Tapered roller bearings run in oil.

Standard pumps are built in capacities for all standard ranges.

Taylor Firm Honored

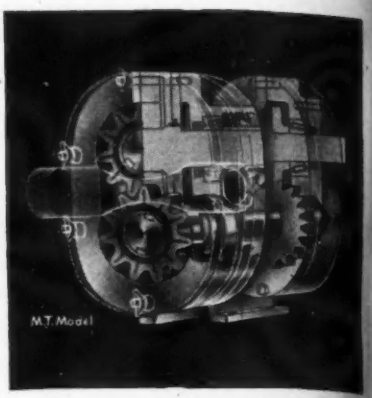
S. G. Taylor Chain Company, Hammond, Indiana, has been awarded a fourth star to be added to the Army-Navy E pennant as a distinction of continued excellent performance in producing war equipment.

Bulletins Issued

American Locomotive Company, 30 Church Street, New York 8, New York, has published two bulletins. No. 1034 describes prefabricated piping, pressure vessels and fabricated plate work, and heat exchange equipment. No. 5001 describes types of springs produced by the company for industrial use.

☆

E. R. NEATH, East Texas pipe line scout for Humble Pipe Line Company, has been promoted to assistant division superintendent with headquarters at Longview. He is succeeded by L. D. Barton.



Marco Pump

Goulds Wins Award

Goulds Pumps, Seneca Falls, New York, has received the Army-Navy E award for outstanding achievement in the production of war materials. In reply to a telegram of thanks from Secretary of the Navy Forrestal, workers pledged themselves to continue with renewed zeal the production of pumps.

Powerful Hose Offered

United States Rubber Company, Rockefeller Center, New York, is producing a flexible hydraulic hose said to send out a stream of water powerful enough to rip the bark off a log. The hose is braided with wire and is specially fabricated to withstand powerful pressures. Two jets of water spurt from nozzles mounted on a mobile carriage.

Slide Rule Perfected

Pickett & Eckel, 53 West Jackson Boulevard, Chicago 4, Illinois, has perfected a new slide rule and decimal point locator which enables a person with a limited mathematical background to solve and place the decimal point up to 19 places. Included on the rule are cube root, square root, log and trig factors.

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